AUGUST 1959

BUTANE-PROPANE News

What price adequate storage? 27

War on weight . . 52

A CHILTON PUBLICATION

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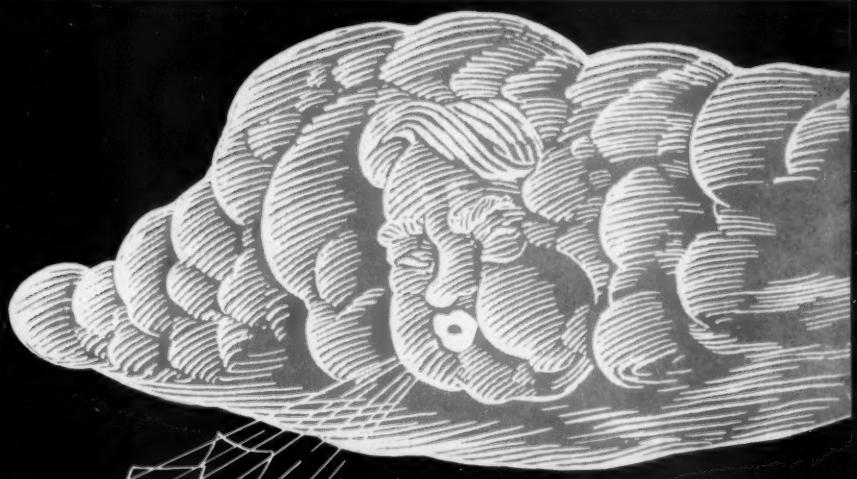
when the first cold blast of winter blows in a "storm" of orders . . .



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For complete specifications, write to the address below, or see your Pressed Steel Tank representative.

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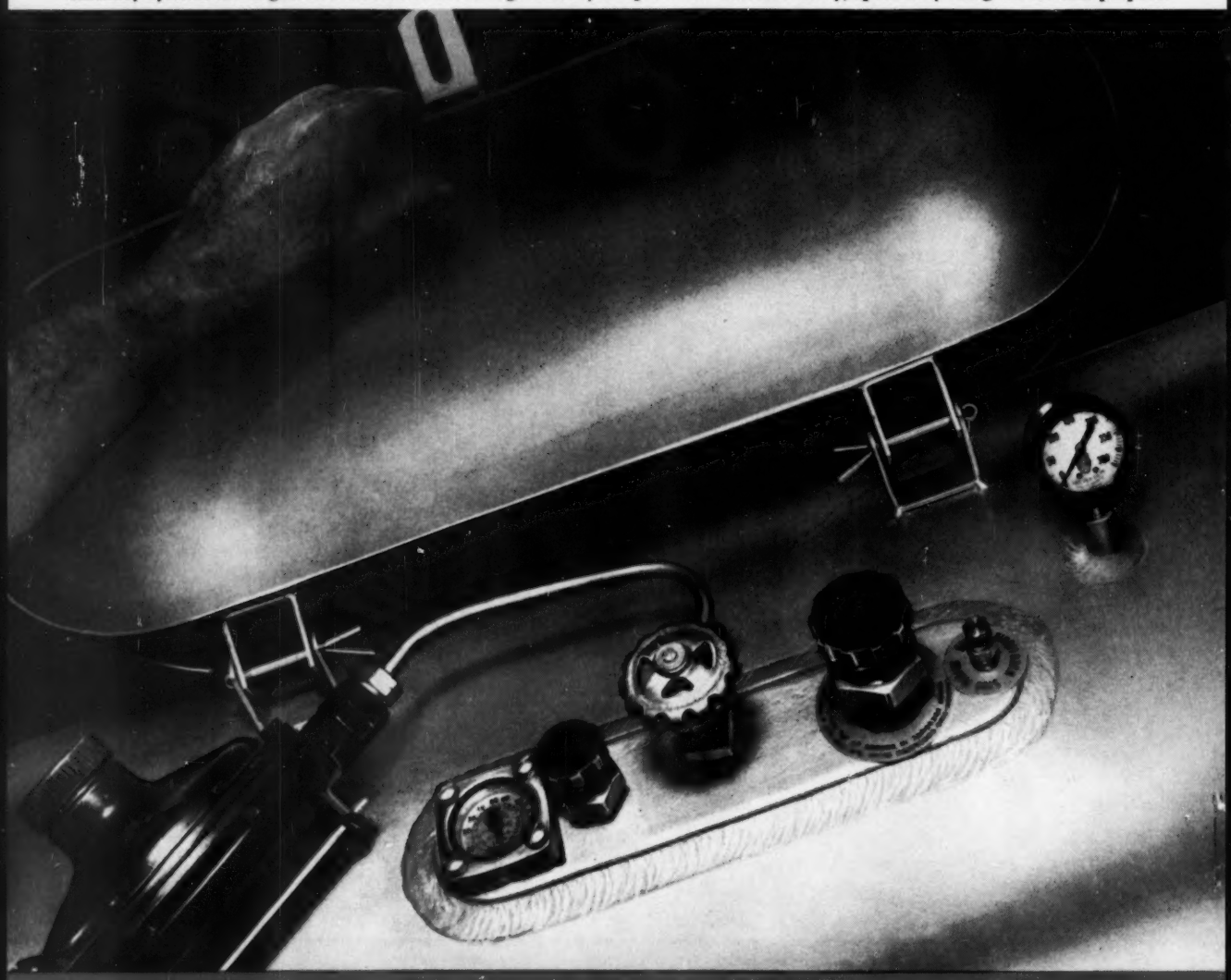

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Pressed Steel Tank Company

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ROCKWELL

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Baso low gas-consumption pilot burners virtually meet every design requirement for small appliances, such as water heaters and space heaters. Any one of a Series of Baso pilot burners provide good flame stability, positive ignition over a wide range of gas pressures and ambient temperatures.

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BPN

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By its very nature, the LPG business is highly dependent upon "paintenance"—maintenance through proper painting. A paint expert covers all aspects of "paintenance." **Michael E. Spatz**

Two-way cylinder leasing 41
Thanks to a two-way cylinder-leasing program, Palm Gas Service Inc. is ready for the coming winter. The firm leases two-cylinder packages under a newly-inaugurated plan, then leases them to its customers. **Edward G. Dickson**

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As both a tank manufacturer and a veteran LPG dealer, J. E. Allen is in an ideal position to offer advice to transport and bobtail buyers. **Ken Kirkpatrick**

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For this latest dispatch on this continuing battle, BPN sounded out the manufacturers, found more and more of them are using more and more T-1 steel. Advances also continue on other fronts in the weight war.

Preventive maintenance keeps fleet rolling around the clock 58
When the schedule calls for it, all of Griffith Transportation's trucks can be kept rolling on an-around-the-clock basis, thanks to a thorough preventive maintenance program.

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Unique installation uses 34 wall heaters 66
One large central heating unit would seem to be much more desirable and economical than a large number of small wall units. Yet, just the opposite was true in this case.

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Because of the promotion Hausgas expects to sell more gas ranges in 1959 than any other year it has been in business.

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A Bigger Share...

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Providing maximum LPG storage for your customer's security is one of the best ways possible for you to gain and hold customers. The cost is practically nothing! The steel propane storage tank on your lot is worth just as much today as it was ten years ago . . . and it will retain its value.

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- Deliver Extra Gallons Each Trip
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- Earn More Money

. . . The Nor-Tex Way!

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National Sales Agents for

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TRANSPORTS

You can now haul MORE GAS and LESS STEEL than ever before with skillfully engineered, smart looking, streamlined Nor-Tex transports of T-1 and A-202 steel. These easy-to-maneuver, road-tested units are hauling more gas and substantially boosting profits for users everywhere. Nor-Tex transports are also completely safe and dependable . . . built by men with years of bulk plant experience.

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4 BIGGER PAYLOAD DELIVERY UNITS

2500 WG Units Weigh Under 23,000 lbs. Loaded

- **STANDARD TWIN**
- **PAYLOAD SPECIAL**
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Every bulk plant operator is interested in these four new, sleek, LIGHT-WEIGHT, streamlined, twin or single barrel Nor-Tex LPG Delivery Units with their *high flow plumbing*. Even 3000 WG units and over are within the 18,000-lb. axle limit.

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AS TANK CO.

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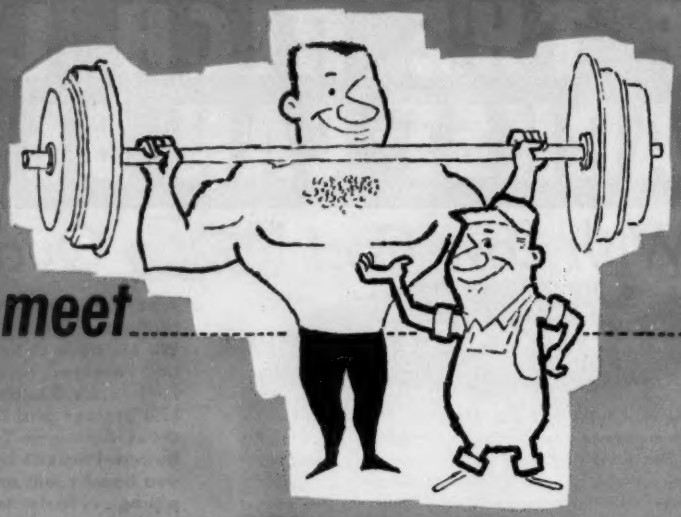
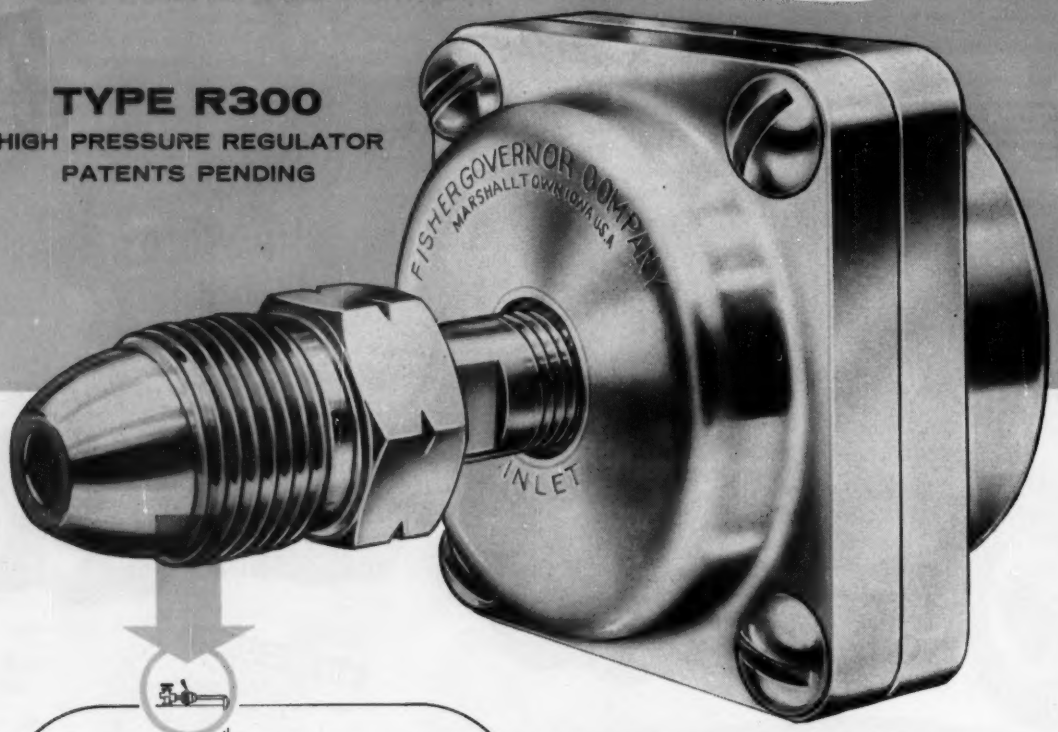
Little Joe wants you to meet

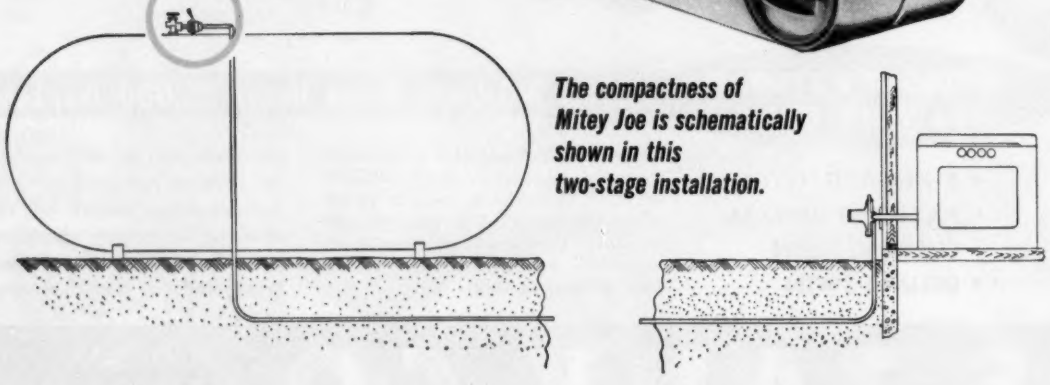


TYPE R300

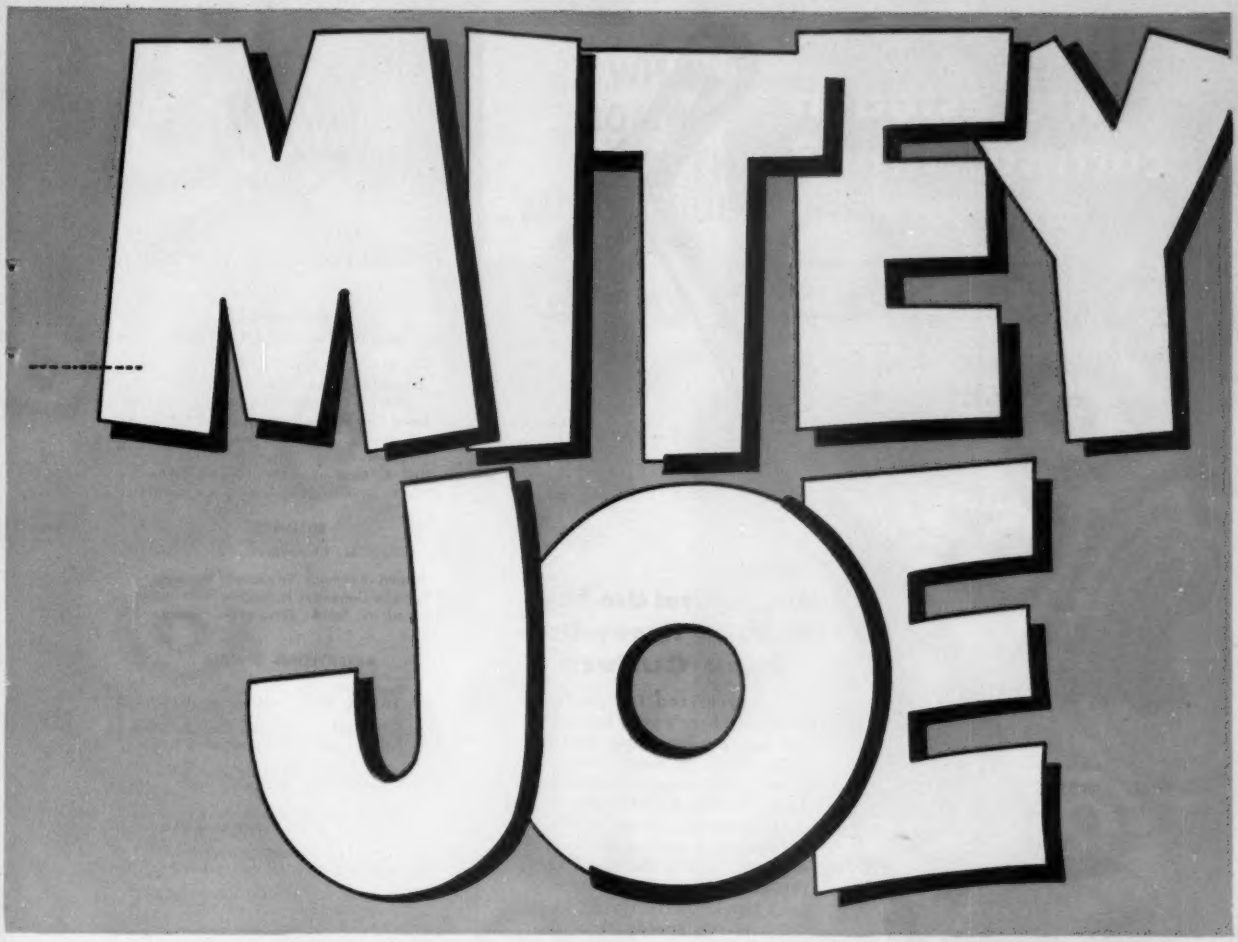
HIGH PRESSURE REGULATOR

PATENTS PENDING





The compactness of Mitey Joe is schematically shown in this two-stage installation.



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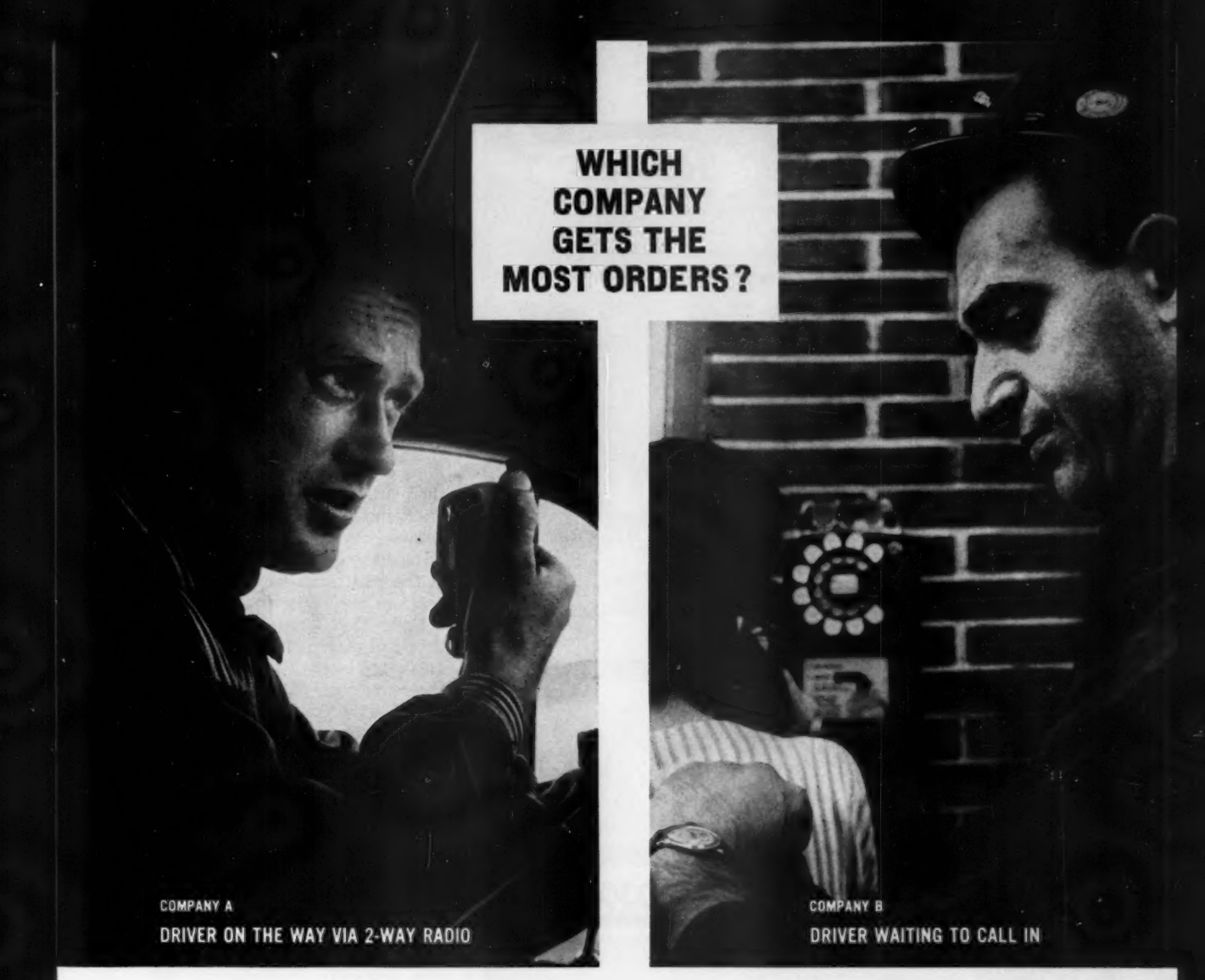

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The ROYAL Thru-the-Wall Vented Gas Heater . . .

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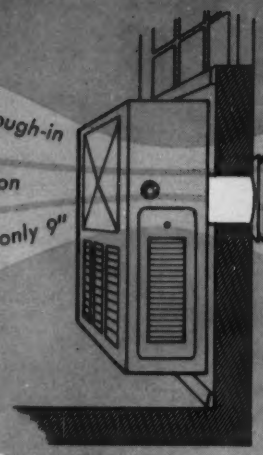
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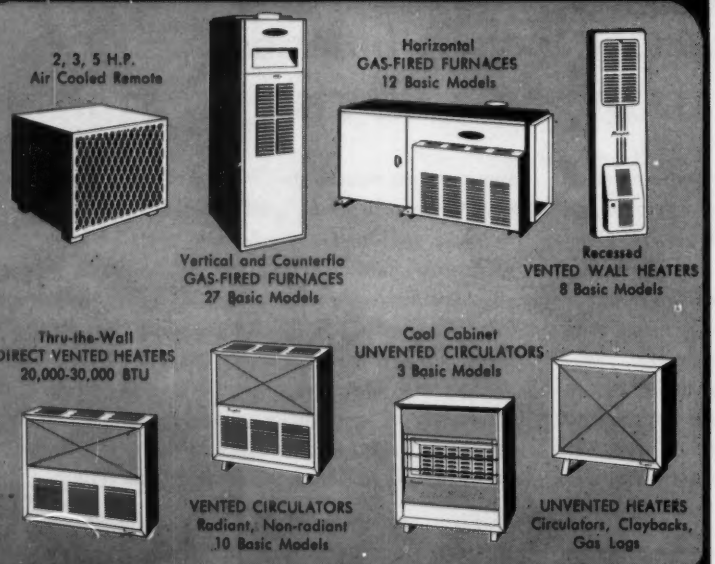


CHATTANOOGA ROYAL COMPANY
CHATTANOOGA 6, TENNESSEE

behind the scenes BPN

The broad field

BUTANE-PROPANE *News* serves just one industry—LPG. From coast to coast and border to border, it's a pretty well unified group. But there are differences of opinion and operating methods, which is good, because it's what makes the world of business go around.

The most striking of these differences are regional.

Take the West, for instance. Proud of their pioneering heritage (although most of them first made their way west in a Domeliner or a DC-7), the "natives" like to think of themselves as "progressive." The East, on the other hand, is characterized by conservatism, or in the words of an easterner, "wisdom" and "judgment." Then there's the South, and—well, you know how Texans are. There's simply no room for argument. The Midwest is solid as a rock, quiet, unobtrusive, harder to pour into a mold.

When you're publishing a magazine, you strive to reflect all these differences. You can't do it while sitting on your overstuffed executive chair. So you get out in the field—a "field" that's roughly 3000 miles wide and about 1500 miles deep.

It takes a heap of traveling. BPN attacks it from both sides, the East Coast and the West, and the editors ooccasionally meet in the middle. We all put on thousands of miles every year—tens of thousands, in fact—just to keep tab on what's making the industry tick.

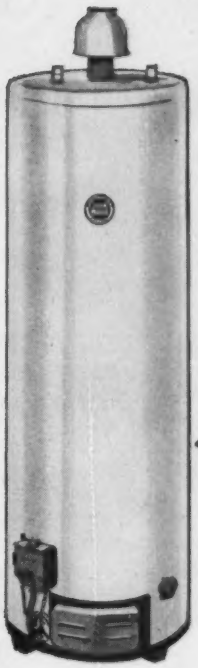
How much time does this consume? Between one-fourth and one-third of the working year, we've found. For example, so far this year, in the first 27 weeks, the editor (from the West) has been on the road 8½ weeks. That's just a half a week shy of one week in three.

Hmmm. Wonder what happened to that half a week. . . .

YOU SELL MORE BECAUSE... YOU HAVE MORE TO SELL

WITH THE JOHN WOOD FULL LINE

plus **GLASSLINER**



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IT'S NOT FAT
IT'S NOT THIN

IT'S JUST RIGHT!

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Look over them all. GLASSLINER stands out ahead in sales appeal. Exclusive new cast iron burner permits the low silhouette. Glasslined and galvanized in 20, 30 and 40 gallon models.

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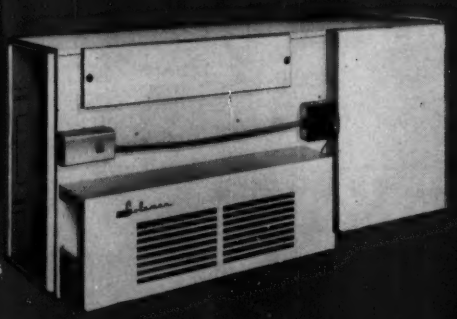
QUALITY PRODUCTS JOHN WOOD SINCE 1857

Now America's only bonded line of home heating and air conditioning is bigger and better than ever.

next to the furnace itself, Coleman's bond does your best selling

Coleman

COLEMAN'S EXCLUSIVE $500 WARRANTY BOND* assures your buyer he's getting the best in comfort, the finest quality in heating equipment. This unique bond stands behind every Coleman heating and air conditioning unit. The Trim-Boy horizontal-flow furnace shown below—in sizes from 65,000 to 145,000 BTU input—speaks of quality with a soft-voiced blower and unexcelled performance. Designed with air conditioning in mind, now or later. Call your Coleman distributor or write.

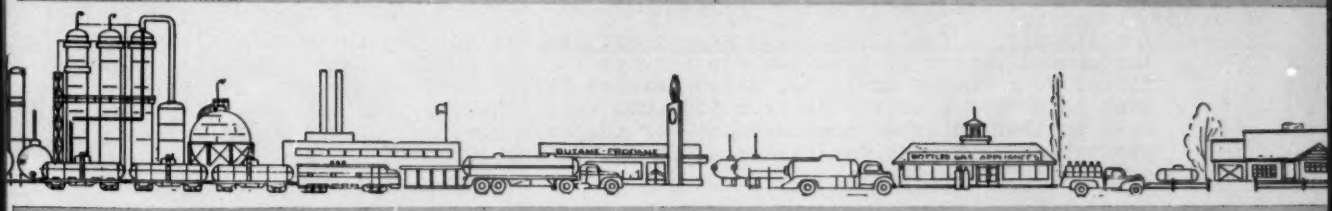


The Coleman Company, Inc./Wichita 1, Kansas

ATTIC UTILITY ROOM BASEMENT CRAWLSPACE

HIGHLIGHTS

BPN



The nation's economy bustled into summer with almost all segments going at a boom or near-boom clip. The industrial segment paced business activity with new highs that were 4 per cent above the 1957 pre-recession peak. New home construction remained at a rate which--if continued--would produce a record 1.34 million new homes in '59. Retail trade was running about 10 per cent ahead of '58. For consumers, all this had a triple effect: employment reached a record high of 66 million, unemployment was down to 3.3 million (lowest in 18 months), and the purchasing power of the average worker hit an all-time peak, some 10 per cent over last year's figure.

This happy pace is reflected in gas appliance sales. In a speech prepared for a Canadian gas association meeting in late June, GAMA President Edward A. Norman said: "I see a new vigor in our industry--all along the line, in the laboratories, production lines, advertising and promotional offices, on the sales fronts, and in the national association's activities." Norman's speech included several industry figures for the first five months of '59. Included were: central heating equipment, up 29.3 per cent; water heaters, up 16.9 per cent; and gas ranges, up 12.5 per cent.

Hottest item in ranges continues to be the built-in. Sales for the first five months ran 63 per cent ahead of last year. May shipments added up to 28,900 units, an increase of 10,800 over May '58. The five-month tally for built-ins was 121,600 units; for free-standing ranges 673,800, giving a five-month grand total of 795,400 gas ranges.

The five-month heating equipment sales picture shows a generally upward trend. Most types of equipment showed substantial increases: furnaces, up 37.6 per cent; vented recessed wall heaters, up 28.9 per cent; floor furnaces, up 9.4 per cent; unit heaters and duct furnaces, up 9.6 per cent; and miscellaneous direct heating equipment, up 13 per cent. The only negative aspects were conversion burners, which dropped 12.6 per cent, and boilers, which showed no change from '58.

Hot water heating should receive a real boost, however, if current plans of two manufacturers meet with the expected success. The Permaglas division of A. O. Smith Corp. in mid-July announced plans to "pursue vigorously the expanding hydronic home heating market." The plans call for "an aggressive approach...that includes the introduction of the completely new 1959 Permaglas gas-fired boiler line, a special series of country-wide sales sessions, and supplemental literature and supporting material unsurpassed in the field." Another manufacturer, Peerless Heater Co., has launched a two-boiler promotion to take advantage of groundwork laid by national campaigns on behalf of the two-car, two-TV-set, two-radio family. Two boilers, according to Peerless, make sense in today's odd-shaped floor plans and add prestige and resale value to the home.

Continued

HIGHLIGHTS

The industry's fantastic sales growth pattern was pointed up in mid-July by the annual report of Suburban Gas Service Inc. of Pomona, Calif. For the fiscal year ending April 30, sales totaled $11,379,000, a whopping 36 per cent gain. Net profit rose from $868,000 to $1,069,000. The growth continues with another Suburban announcement--of the cash purchase of six distributing plants in New Mexico (at Espanola, Chama, Gallup, Grants, and Santa Fe) and Colorado (Denver).

LPG's significant strides in the carburetion field are evidenced by first quarter figures showing LPG-powered wheel tractor sales are growing 15 times faster than those of wheel tractors as a whole. LPG wheel tractor sales were up 31 per cent, as compared to 2 per cent for all wheel tractors. There is still a long way to go, however, as LPG models accounted for only 5 per cent of the total.

Safety-wise, June was the blackest month in LPG history. Twice during the month, newspaper headlines blared out the sad tale of mass death through LPG explosions. Until all final reports are in, comment is presumptuous, save to say that an inestimable amount of accelerated public relations work will be required to overcome this safety setback and, safety should continue to be the prime consideration in all transport thinking.

Hard on the heels of the Georgia disaster came the announcement that the Maryland State Roads Commission had completely banned transportation of LPG through the Baltimore Harbor Tunnel. A previous ruling had prohibited LPG as cargo, but the new interpretation bans it as a fuel, either for the vehicle or for its heating or refrigeration units. The ruling followed the acquittal of a man arrested for driving an LPG-refrigerated truck through the tunnel.

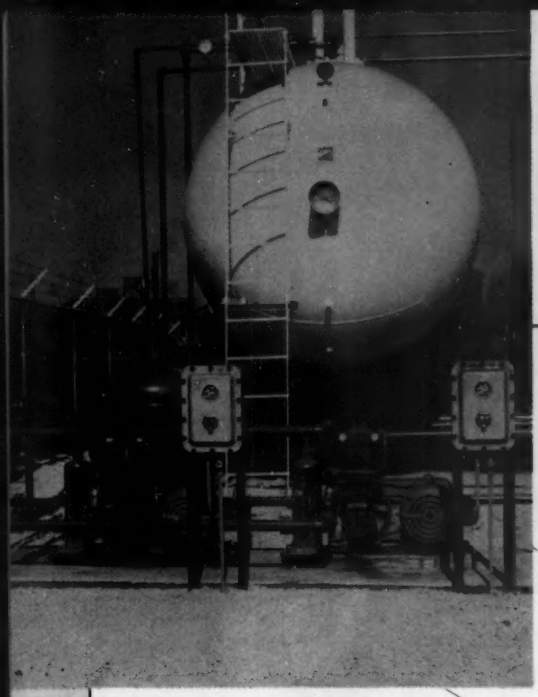
Underground storage continues to make news. This month (August), Cincinnati Gas & Electric Co. will begin storing propane in a 100,000-bbl underground cavern near Middletown, Ohio. And in early July, Omaha's Metropolitan Utilities District approved a contract for a 150,000-bbl cavern to store propane for peak-shaving.

Another big handling facility announced is a half-million dollars LPG barge terminal to be completed within 90 days along the Mississippi River in Chicot County, Ark. The 600,000-gal. installation will serve five states --Arkansas, Louisiana, Mississippi, Tennessee, and Alabama--with LPG barged from Lake Charles, La.

A record 183 dealers were added to the National LP-Gas Council in less than 2½ months, the Council announced in mid-July. Reason for the membership boom is the Council's $100,000 Win-A-Home Sweepstakes. As long as Sweepstakes material holds out, new dealers will be accepted for the tie-in.

David Alex Garrick, 48, president of Cherokee Labs Inc. (Tulsa oil firm and parent company of tank-manufacturing Cherokee Steel Co.) was one of four killed when his light plane crashed in Missouri, early in July. Also killed was William A. Wood, vice president of Cherokee Labs.

Dispatches from overseas relate two interesting developments. Unknown in South Africa as a motor fuel, LPG is now available there for carburetion purposes and is expected to become extremely popular, having a 33 per cent price advantage over other fuels. Arabian American Oil Co. announced that a $5¼ million plant on the Persian Gulf of Saudi Arabia, to be completed in one year, will be the first to produce refrigerated (-25 deg. F.) LPG for tanker shipment.



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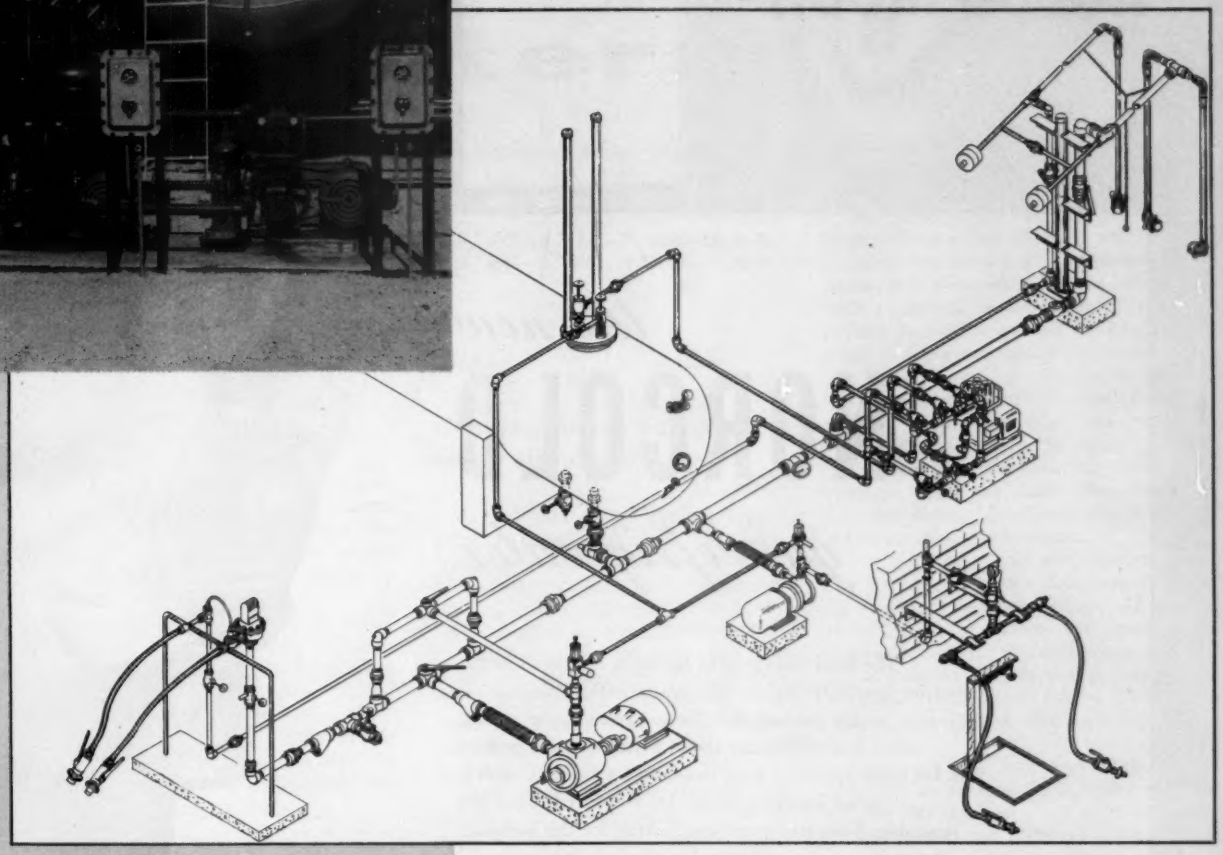
but NET down
then try ANCO now!



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Anco can handle all or any part of an LP Gas plant, new or modernization project, on land or water. Two plate shops and complete warehouse stocks enable ANCO to meet delivery requirements and competition.

Profit can't stay up if you are handicapped by inadequate storage, inefficient layout and slow transfer equipment.

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6 cu. ft. – 43¾" H – 23⅝" W – 27⅛" D

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Dept. 16 — 5111 W. Washington Blvd., Los Angeles 16, California

Letters

Gas evaporators made for maple syrup

Michigan

We have a customer making quite definite plans for putting in a new evaporator for making maple syrup. He now uses wood and coal and would like to go to L. P. gas but only information he has received is on fuel oil.

We consider this to be quite a large operation with approximately 3000 trees tapped. The only experience we have had with gas to an evaporator is the common drilled or raised port burners under flat or corrugated pans which we understand would not begin to take care of this job.

The evaporator he has in mind is 6 x 18 ft and will boil 450 gal. of sap per day with fuel oil. We figure this would probably require a power burner or burners.

If you have any information that would help us as to who to contact or previous experience, we would appreciate a reply.

D. D. L.

There are several installations using LPG as the fuel to produce maple syrup.

One installation is described on pages 62 and 64 of the February, 1956, issue of BUTANE-PROPANE *News*.

This installation is owned and operated by Chester A. Wilson, of Rock Springs, Wis.

Many of the evaporator manufacturers supply gas burners with their evaporators for syrup production. Some of the manufacturers who have gas burner equipped evaporators:

Corcoran Mott & Co., 7th and Myrtle Sts., Louisville, Ky.; Vermont Evaporation Co. Inc., Ogdensberg, N. Y.; The Leader Evaporation Co., Burlington, Vt.; Zalle Bros. & Johnson, 800 Locust St., Wilmington, Del.

The following companies manufacture gas burners which may be used to fire evaporators:

North American Manufacturing Co., Cleveland, Ohio; Weskin Products Inc., 38th Road, New Castle, Ind.; Bryant Industrial Products Corp., 17700 Miles Ave., Cleveland, Ohio; Maxon Premix Co., Muncie, Ind.—Ed.

Cooking fumes cause most discoloration

Iowa

A customer who installed a propane furnace last fall, says her windows constantly collect a brown film. She says this problem started with the heating season, and she feels related to the propane heat.

The lady has an exhaust fan over her range; so she doesn't think this brown film comes from cooking. There is a cold air register directly opposite the range, about 8 ft. away.

Our dealer did not install the furnace, but it appears to be in working order. The heating company that did install the furnace has checked the combustion chamber for leaks, but none can be found.

Until someone can find the answer to this "brown film" the customer will suspect propane heat. If you have any suggestions, we would certainly appreciate hearing from you.

H. C.

By making a few careful observations your customer can prove to herself that the brown film is not caused by the propane heating system. It comes from cooking fumes, smoking and extremely fine dust or other impurities in the air.

Fumes from cooking will not move directly to the exhaust fan. It is difficult to observe the movement of air, but if some oil or grease in a frying pan is heated until it smokes it can be seen that the smoke does not go directly to the fan. Some will, but most of it will eddy away and circulate around the room, even into other rooms of the house.

The same effect can be observed when boiling a pan of water with the exhaust fan operating. Cold window panes and walls will soon be coated with condensed water vapor.

Persons moving around the kitchen keep the air constantly in motion. Air currents or drafts cause the fumes to move about the room. Even with a good hood over the stove fumes, will escape to the room.

The fan cannot exhaust air from a room or house any faster than fresh air can enter. Provision should be made for some ventilation.

You mention a cold air register in the kitchen. I assume it is connected to a central heating system. If so, it will help circulate the cooking fumes throughout the entire house.

An exhaust fan is a big help in removing odors and fumes, but it cannot immediately eliminate all of them.

Engineers are well aware of the behavior of gaseous fluids under conditions like this.

The fumes and moisture-laden air circulate through the house and when they contact a cold window the oily or greasy fumes and moisture condense on these surfaces. The film will appear whether the cooking is accomplished by gas, electricity, oil or wood heat. It will be more noticeable during the winter than in the summer, because the windows and walls are warm and there is more ventilation in the summer.—Ed.

Possible causes of regulator fluctuations

Montana

We would appreciate your advice as to the cause of a troublesome regulator suddenly surging to 15 or 20 oz of pressure while operating an L. P. gas furnace. It is

used as a secondary unit, being supplied from a 1000 gal. propane tank equipped with a high pressure regulator set to deliver at about 20 lb pressure.

The secondary regulator will operate for quite some time at normal pressure—then suddenly will go to the higher pressure, causing appliances to flare up for a moment. The excess pressure is then released through the vent in the regulator and returns to normal operating pressure. It is all the more baffling since this is the second regulator we have installed on this job, the first unit operating just as this one does.

Could you please advise us as to the cause and cure?

L. C. D.

The secondary regulator may not be at fault. There are some items which should be checked on it, however, before going farther. Probably you have already checked them.

1) Dirt or other foreign matter may be momentarily stopping the regulator orifice and getting under the seat. It then has to open wide in order to supply the demand and cannot lock up quickly, especially if a soft foreign matter sticks under the seat. Inspect the orifice and valve seat for evidence of foreign matter.

2) It is possible that the vent becomes stopped with ice or snow and causes the pressure to build up until it reaches the relief valve setting. Then the pressure cleans the obstruction from the vent.

3) Water may enter through the vent and load the diaphragm.

4) The regulator may be in a location where sudden gusts of wind may cause the pressure to build up on the diaphragm. This does not seem probable because of the high pressure you mentioned in your letter.

The above pertains to the secondary regulator. Here are other items to check:

1) Place a pressure gauge in the line between the primary and secondary regulators and observe the action there.

2) It is possible the primary regulator is freezing or otherwise malfunctioning, causing sudden fluctuations in pressure.

3) Moisture or L. P. gas may be condensing in the line between the two regulators. At 20 psig butanes or other heavy ends may condense. When a sufficient quantity is formed it may move through the secondary regulator as a slug of liquid. Due to the sudden reduction in pressure and moving into a warm pipe the slug of liquid vaporizes faster than the furnace can use it. It then raises the pressure in the low pressure line to the relief setting of the secondary regulator. The primary regulator, due to dirt or freezing, may deliver at high pressures into the line between the regulators. This increases the probability of condensation. If the tank pressure drops below the 20 psig setting of the primary regulator, then condensate is almost certain to form in the line between the regulators. If a section of the line sags at the inlet to the secondary regulator and is exposed to the atmosphere, then condensate can form at the entrance to the secondary regulator and will pass through the secondary regulator when the furnace calls for gas.

4) Be sure the pipe or tubing feeding both regulators is arranged so that condensate can run back to the tank, or back into the underground piping from the secondary regulator inlet.

5) Reduce the pressure setting of the primary regulator as low as possible (10 psig or less), providing however, that the pressure is sufficient to move through the line and secondary regulator and provide 11 in wc pressure.—Ed.

NEW "3-D" on-the-floor warmth ONLY with Magic Chef Wonder Warm gas space heaters!

MagiCarpet Heat

MagiCarpet Heat spreads from both sides as well as the front of the heater—fills every corner of the room wall-to-wall.

It's "3-dimensional" warmth and it's exclusive!

OLD STYLE HEAT LEAVES COLD ZONES

Profits come BIGGER and faster!

an exclusive feature to sell . . . a great name to help you sell it.

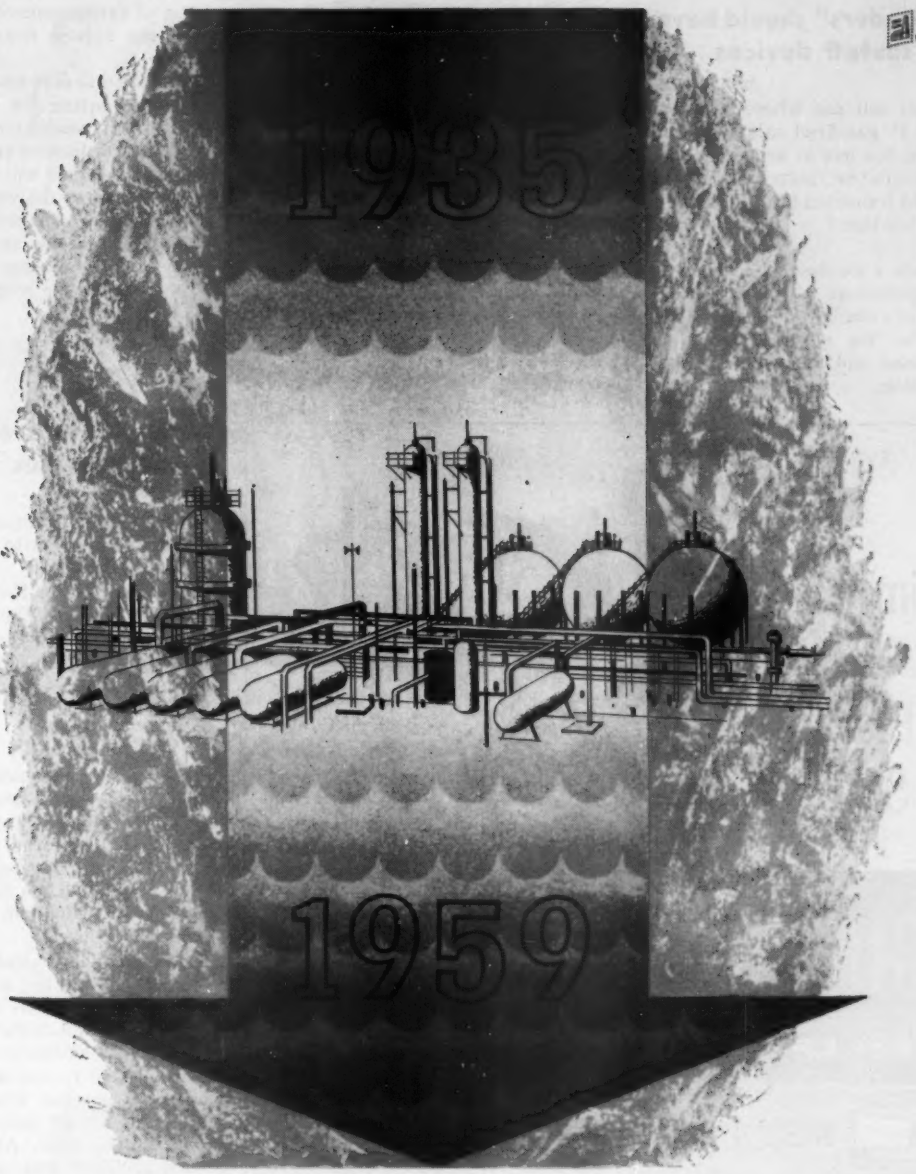
GET AN EARLY START — MAIL COUPON TODAY!

WONDER WARM CO. • 4101 Charlotte Ave. • P.O. Box 1184 • DEPT. BP • Nashville, Tenn.

I would like to have, without obligation, more information about the exclusive "3-D" heat feature and the profit story of Magic Chef WONDER WARM space heaters.

NAME _____ STORE _____

ADDRESS _____ CITY _____ STATE _____



10 . . . 20 . . . 25 years without interruption . . .

Over 20% of Shell's LP Gas Distributors have been constant contract customers for Shell Propane—for ten to 25 years without interruption.

Year after year, Shell has maintained a 100% delivery record to all its propane customers. This achievement stems from one important policy:

Shell contracts to sell propane only within its capacity to produce.

Let a Shell Representative show you why it pays to be a Shell Propane contract customer.

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Albany • Atlanta • Baltimore • Boston • Chicago • Cleveland • Detroit • Indianapolis • Los Angeles
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"Salamanders" should have safety shutoff devices

Minnesota

Can you tell me where we can obtain L. P. gas-fired salamanders, or heaters, for use in keeping plaster, concrete or plumbing from freezing in unheated buildings during cold weather?

W. W. C.

There are a number of companies which manufacture L. P. gas salamanders or similar type portable heaters. See the advertisements in this magazine and the listing in the BPN Catalog.

Some of these portable heaters may be found with thermostatic controls included.

Caution should be exercised in the use of these heating devices. They should be equipped with 100 per cent safety shut-off devices so no gas can escape if the pilot flame is extinguished.

No heater employing an open flame should be used within an enclosed space unless provision is made for adequate ventilation. Unless adequate ventilation is provided, the flame will use the oxygen from the atmosphere until there is not enough for complete combustion. It will then cause the formation of carbon monoxide and eventually the burner flame will extinguish.

Ventilation is also needed if drying is required during the heating process. Without ventilation the water vapor from combustion and that driven from wet materials will soon saturate the air and cause the walls and other materials to become wetter than before the heater was started. An exchange of air is necessary in order to carry the moisture away.—Ed.

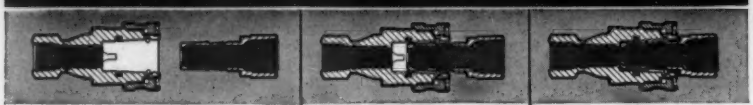
Eliminates Hazard of Leakage or Spillage

NO TOOLS REQUIRED

APPROVED BY UNDERWRITERS' LABORATORIES

HANSEN 3-GRL1621 QUICK-CONNECTIVE COUPLING

For LP-Gas Line Connections



DISCONNECTED
Closed valves in Socket and Plug provide positive shut-off on both sides of line.

PARTIALLY ENGAGED
Coupling sealed by O'Ring — while valves remain closed. No possibility of premature flow or leakage.

FULLY ENGAGED
With Socket and Plug fully engaged to insure positive, foolproof connection, valves open to permit free flow of gas.

Specifically designed for LP-Gas line connections, Hansen GRL Couplings completely eliminate the hazard and annoyance of leakage or spillage of gas.

To connect (no tools required), you merely push the Plug into the Socket—all the way. To disconnect, just turn sleeve—Coupling instantly and automatically shuts off both ends of line.

Sockets available with ¼" female pipe threads. Plugs available with ⅜" female pipe threads.

*APPROVED BY UNDERWRITERS' LABORATORIES

Write for descriptive literature

SINCE 1915 QUICK-CONNECTIVE FLUID LINE COUPLINGS

THE HANSEN MANUFACTURING COMPANY

4031 WEST 150th STREET • CLEVELAND 35, OHIO

Electric boys are telling tall tales

Montana

The electric companies in this area are making quite a bid for the heating load.

They are telling their customers that they can heat their houses for less with electricity selling for 1 cent per kwh than they can with propane selling at 18 cents per gal.

Is this true?

R. D. B.

The electric companies are incorrect if they say they can heat a home for less selling electricity at 1 cent per kwh than when heating with propane at 18 cents per gal. Also, be sure that 1 cent per kwh is the total price and look out for connected load rates in the summer months.

One kwh is equivalent to 3412 Btu. Assume that all the heat from the kwh becomes useful heat for the home. This is questionable.

The AGA efficiency requirements for boiler and forced warm air furnaces is 70 per cent. They will do better. A gallon of propane contains 91,600 Btu or more. At 75 per cent efficiency, 68,700 Btu will reach the room as useful heat, and at 70 per cent efficiency 64,120 Btu will then reach the room as useful heat. Then, 68,700 divided by 3412 equals 20.2 kwh hours to equal the heat delivered from 1 gal. propane burned in a central heating system at 75 per cent efficiency and 64,120 divided by 3412 equals 18.8 kwh.

Remember we have given the electric supply full credit for 100 per cent efficiency which is doubtful by 2 or 3 per cent, while we have taken *minimum* permissible AGA approval efficiency. Most appliances will do at least 2 to 3 per cent better.—Ed.

Nationwide, profit-minded gas heater dealers are saying,

"WE NEVER HAD IT SO GOOD!"

—Here's *why*...and *how* you, too, can ride on the Safti-Vent profit train

In January, Safti-Vent reviewed its sales curve and found it to be the sharpest-rising in the entire heating industry. Sales objectives were, accordingly, set optimistically high. *To date, sales have exceeded quotas by a whopping 85%!* And so have dealer profits!

If you want "in", we'll be glad to have you.

The Safti-Vent deal continues to offer a "package" that will build your profits *almost automatically*, and we mean exactly that!

Proved profits, backed by 7 years of phenomenal growth, are being again proved in this 8th year of spectacular success.

The five-way Safti-Vent sales platform remains unchanged—except it's larger. Why argue with success?

1. A Safti-Vent line packed with superior and exclusive features.

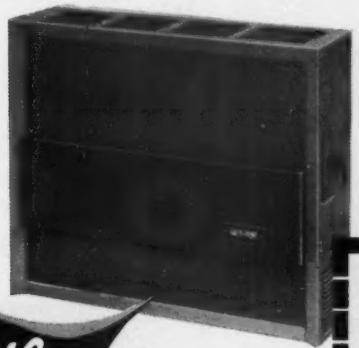
2. A near-universal market and models to serve the demands of all.

3. Safti-Vent's planned sales program, that tells you exactly what to do and gives you the "tools" to do it!

4. An even larger-than-announced householder and commercial advertising program.

5. And a competitive price!

Yes, if you want to ride the Safti-Vent profit train, we'll be glad to have you aboard. Safti-Vent knows where it's heading, there's a clear track ahead and a reservation for you.



MODEL WV-22
One of eight
Safti-Vent models

H.C. Little BURNER COMPANY, INC.

SAFTI-VENT

leader in sealed heating

H. C. LITTLE BURNER CO., INC.
105 Woodland Ave., San Rafael, Calif.
Profit for Me? I want in! What's the deal?

COMPANY_____

YOUR NAME_____

ADDRESS_____

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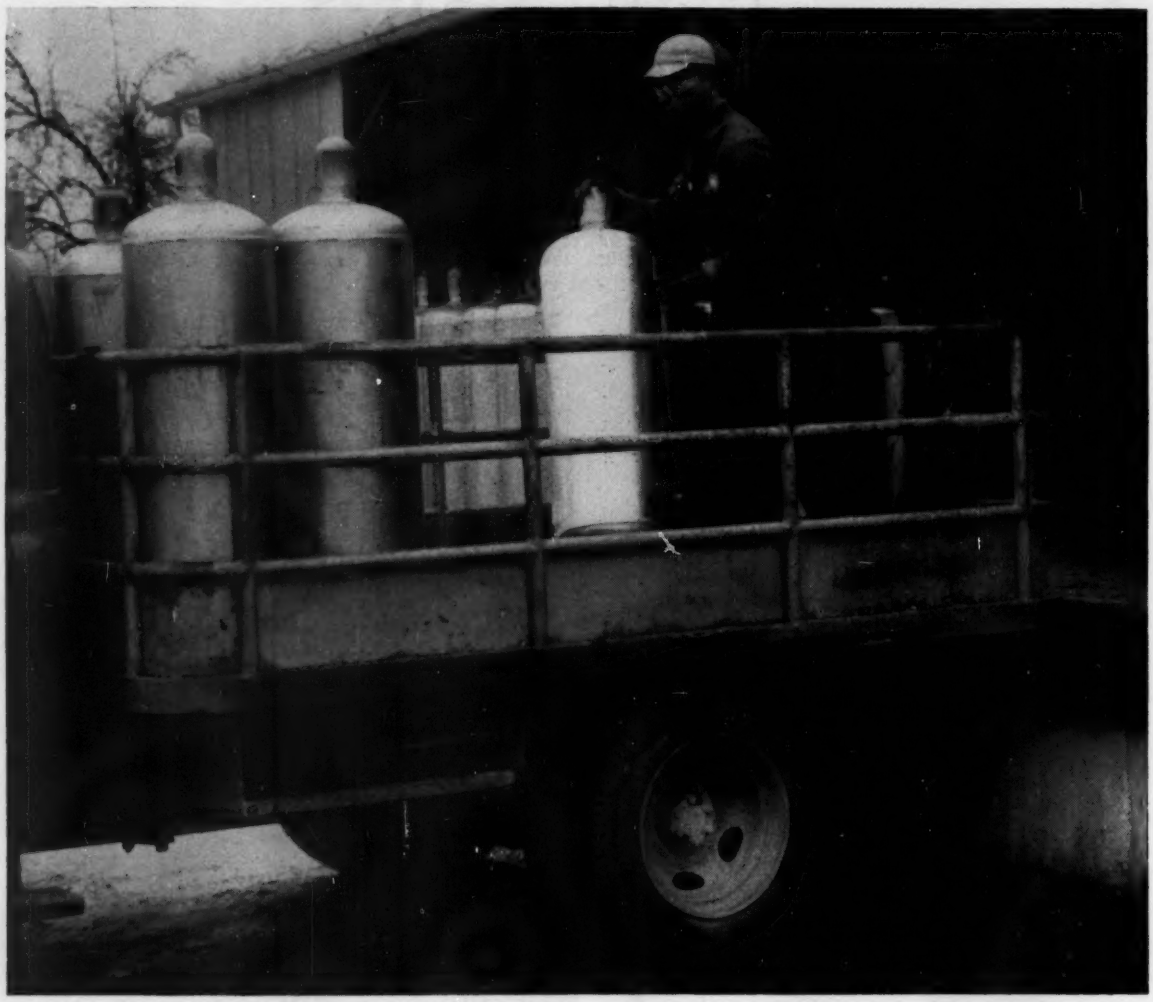
On time on FIRESTONES!

They cut costs on LP-Gas deliveries

Whether you operate one truck or twenty trucks, count on Firestone Rubber-X, the longest wearing rubber ever used in Firestone truck tires. It's yours with every Firestone, for extra trouble-free deliveries and lower truck tire costs.

And along with new long-wearing tire rubber, all Firestones bring you Firestone S/F (Shock-Fortified) cord for still more stamina and dependability. No wonder more and more truck owners like yourself find it good business, always, to buy Firestones when replacing old tires—and to specify Firestones on all new trucks. Ask about them today at your nearby Firestone Dealer or Store—your headquarters for fast, reliable service!

TRANSPORT SUPER ALL TRACTION



LOOK FOR NEW LOW COSTS PER MILE WITH LONG-WEARING FIRESTONE TRUCK TIRES

Firestone

BETTER RUBBER FROM START TO FINISH

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WASHINGTON REPORT

by NEIL REGEIMBAL, Washington Editor

"Unavoidable" profit tax on co-ops predicted to pass during current session

★ AN UNAVOIDABLE TAX ON COOPERATIVES' PROFITS will pass before the current session of Congress ends one year from now. That's the prediction made by numerous congressional leaders. They expect such a measure to get no more than House approval this year. While the law would neither require co-ops to pay normal corporate taxes nor tax payments to patrons, it would limit the co-ops' present virtual tax-free operation. (Further details on page 83.)

Administration still working to raise interest on REA co-op loans

★ A SPECIAL BANK FOR FINANCING REA LOANS was the heart of a recent proposal by Agriculture Secretary Benson. Under the plan, the government would help create an REA bank to replace the U. S. Treasury in making such loans. It would be privately owned by the co-ops after it became operative and the government stepped out. Part of the plan, an increase in the present 2 per cent interest rate, stirred up the normal bitter reaction from REA supporters.

Supporters convinced Federal Fair Trade bill will pass if vote ever taken

★ THE SUPPORT OF HOMETOWN BUSINESSMEN would convince lukewarm legislators to vote for a federal fair trade law proposal, if one of the bills now kicking around in Congress is ever brought to a vote. That's the opinion of backers of such measures, but they believe it will take strong grass roots support to bring one up for a vote during the current session. The measures are making steady progress, but could get stuck in any one of several places.

Tight money situation to remain for at least six months

★ THE COST OF BORROWING MONEY, at a record high, will probably remain there for at least six months, but there is little likelihood of it going any higher. Authorized by the Federal Reserve Board in late May, the new rates stirred up much reaction—not only among borrowers, but also in Congress. Critics claim that if the new rates do not slacken borrowing volume, the banks will reap higher profits and inflation will increase.

Late '60 tax cut possible

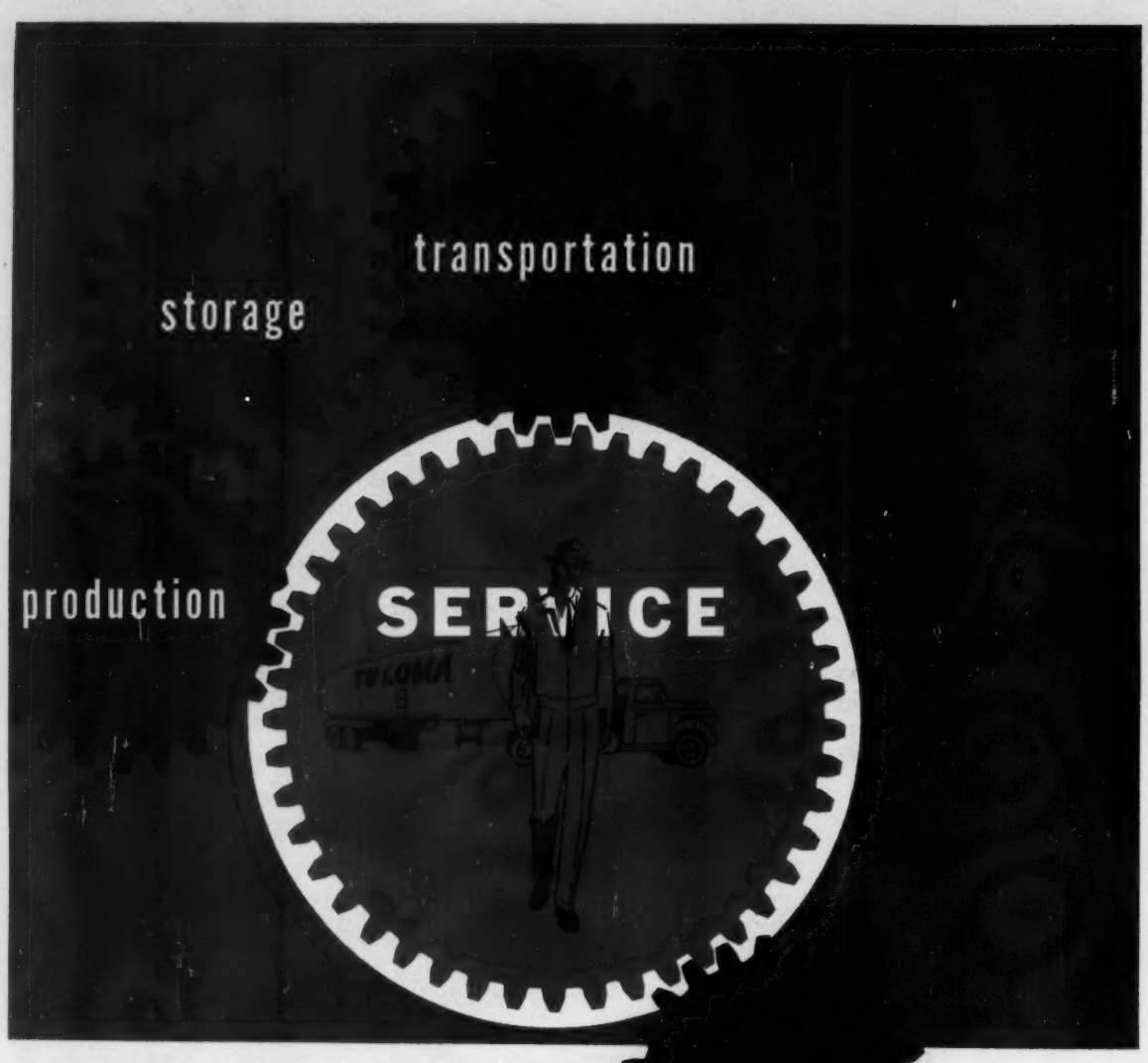
★ BOOMING TAX COLLECTIONS and an unexpected reluctance in Congress to push big spending projects may pave the way for a tax cut late in 1960. It all hinges on whether government spending is held down and economic prosperity continues to bring high revenue. The prospect of a close, bitter presidential election improves the chances.

Businessmen getting active in politics

★ THE CAMPAIGN TO GET BUSINESS INTERESTED IN ACTIVE POLITICS is mushrooming. Widespread management participation in practical politics could materially alter present political trends, weakening union and farm domination of many political organizations. So far, the campaign has shown amazing results. (For further details, see page 82.)

Reforms asked for small business act

★ THE NEW SMALL BUSINESS INVESTMENT ACT, passed last year, should be amended to encourage formation of more companies to make long-term loans to—and equity investments in—small firms. That's what spokesmen for the National Association of Small Business Investment Companies are telling Congress. Among their 11 proposed suggestions are three that would give them a better tax break.



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Tuloma LP Gas

TULOMA GAS PRODUCTS COMPANY
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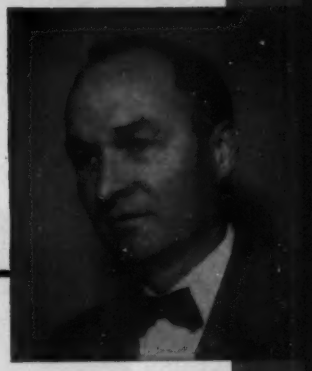
Tulsa, Oklahoma

Beyond the Mains



With WILLIAM W. CLARK • Editor

A brief for self-preservation

DOWN IN TEXAS, HOUSE BILL 4 HAS NOW BECOME LAW. This has a special significance for anyone in the L.P. gas business there, because it imposes a general tightening of the rules and restrictions governing the conduct of LPG marketing.

For members of the Texas Butane Dealers Association, it is cause for jubilation. House Bill 4 was, essentially, *their* bill. They helped author it, did the exhausting spade work required to push it through the state legislature, and then willingly coughed up the extra cash needed to pay for these efforts. The bill was expensive. Chiefly because of it, TBDA piled up a $7000 deficit for the fiscal year. To balance the books, pledges from the floor were solicited at the recent annual convention and trade show. The response was surprising. Within a matter of minutes, $4000 had been raised.

Why all the joy? The bill, which spells out a new set of rules that are tougher then the old, is going to cost every dealer more money than before. License fees have been broadened and increased. Employers and employees both will have stiffer qualifying examinations. Dealers who qualify in certain categories of service may not engage in certain other types of service for which they have not been licensed.

At first blush, it would appear that the dealers who supported the bill are cinching up the halter on themselves. To those who subscribe to the theory that the best regulation is no regulation, such action would be inconceivable.

But the TBDA marketers have recognized that there's a direct relationship between their own interests and the interests of their customers. They've had plenty of object lessons to prove this. In Texas, perhaps more than in any other state, the established dealer has been plagued by the fly-by-nighter.

The most common situation is one where a route driver who has built up a following among his employer's customers suddenly quits his job, scrapes up a minimum of capital, and "goes into business" in competition with his former boss. What does he need? A truck, a source of supply, and enough money in his pocket to buy a bobtail-load of gas. He has no office, no overhead, and above all, no sense of responsibility toward his customers. He systematically raids his former boss and any other dealers in the vicinity. He shaves the price a penny or more, and first thing he knows he's on his way.

Aside from the questionable ethics of such an operation, it has some of the aspects of the "great American dream." Every man with a shoestring can become his own boss—the typical Horatio Alger story come to life.

Unfortunately, the L. P. gas business is no longer the proper kind of business to run with a shoestring. You might peddle gas on a cash-and-carry basis with such a capital structure, and you might pump it into itinerant vehicles from a simple motor fuel station setup, but you can't properly service routes without ample storage, a trained organization, and adequate operating capital. A full-time dealer is not a peddler. He's a service organization, with definite obligations to his customers as to both service *and* safety.

House Bill 4 recognizes this fact. It's what some of the biggest, oldest, and best established dealers in the state wanted. It fell short of the association's aims in only one major respect—"adequate" storage. TBDA had pushed for a minimum dealer storage of 15,000 gal. and a ratio of 6000 gal. per bulk delivery truck. This minimum, intended to apply only to general full-scale retail dealers, was eliminated before the final draft was passed and signed into law.

Whether the law accomplishes its purposes and whether it proves to be the kind of law that is needed in Texas remain to be seen. But insofar as it spells out our obligations of service and safety to the customer, and insofar as it recognizes that the self-preservation of the established, responsible dealer is in the best interests of the public, it is a step in the right direction.

PROMPT DELIVERY ON PROPANE STORAGE TANKS 6,000 TO 30,000 GALLONS CAPACITY AND UP

Production on both vertical and horizontal storage tanks, of 6,000 to 30,000 gallon capacity and up, is continuing at our Milton, Pa. plant. Material is available for 77 1/4" I.D., 123 9/16" I.D., and 130 1/8" I.D. Prompt delivery assured...competitively priced. Phone or wire the ACF sales office nearest you.

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To help get you started thinking about cold weather problems in the dog days of August, BPN presents its annual Winterizing section. The accent is on renovation and innovation. You'll find articles advising how to renovate your thinking to get the most out of your present storage capacity and how to renovate your plant with paint to protect it against winter's onslaught. You'll also find stories about dealers who are preparing for winter by innovation—using two of the newest items available—the temperature compensating meter and the leased cylinder package.

What price adequate storage?

IT'S always a little surprising, and frightening, too, to note how quickly the seasons roll around. Today, the sun is burning at its hottest and brightest, and winter seems distant and unreal. But in a matter of weeks, leaves will begin to turn, the nip will return to the air, and we'll suddenly realize that winter is not a distant prospect, but an imminent, harsh reality.

For the LPG operator, the point of this is that if he hasn't taken the necessary steps to add to his summer load to bring his summer-winter ratio into closer balance; he must be prepared to again face the same old winter supply-and-demand battle. The time for selling off-peak load has about run out!

There are, of course, some rays of sunshine peeking through the dark clouds of approaching winter. Producer and supplier storage is the best ever. A recent Bureau of Mines report shows that capacity at plants and terminals increased 94 million gal. between Sept. 30, 1958 and March 31, 1959. This brings the total of above- and below-ground storage to 1,396,659. The increase amounts to a seemingly satisfactory 7 per cent.

Closer examination reveals that these rays of sunshine may not bring any real warmth to the situation. Year by year product sales generally increase by at least 7 per cent, and these days the sales leader at the LPG retailer's level is householeating—our No. 1 peak load problem. So if householeating alone increases by 7 per cent this year, we may have already erased the advantages of that added storage capacity.

Furthermore, most of the storage capacity is located in PAD District III, which includes Texas, New Mexico, Mississippi, Louisiana, Alabama, and Arkansas. In fact, District III, alone, accounts for 1,132,207,000 gal. of the total U. S. capacity of 1,396,659,000 gal., or more than 82 per cent! So the majority is closer to the source of supply than the markets. Any increases, then, don't go very far toward easing the transportation situation.

Transport is costly. John T. Oxley, president of Texas Natural Gasoline Corp., Tulsa, tells us that "tank cars, barges, underground storage, or other transportation facilities are extremely expensive, and no producer can afford to acquire a large excess of these to use only for a couple months.

"For example," continues Oxley, "a tank car rented at going rates of $120 per month can usually make about one round trip per month. A car cost-

Theoretical Comparison of an Actual Distributor Operation With the Same Operation if Bulk Storage Was Used Efficiently

	EFFICIENT OPERATION	ACTUAL OPERATION
JANUARY		
Gas inventory—January 1	205,000	84,000
Gas purchased—57 cars	.....	601,500
—Per ratio—22	231,000	.....
Total	436,000	685,500
January sales, loss and used	483,500	483,500
Balance on hand, January 31	(47,500)	202,000
Extra to balance—5 cars	52,500	.....
Adjusted inventory January 31	5,000	202,000
FEBRUARY		
Adjusted inventory January 31	5,000	202,000
Gas purchased—47 cars	.....	497,500
—Per ratio—22	231,000	.....
Total	236,000	699,500
February sales, loss and used	594,500	594,500
Balance on hand, February 28	(358,500)	105,000
Extra to balance—35 cars	367,500	.....
Adjusted inventory February 28	9,000	105,000
MARCH		
Adjusted inventory February 28	9,000	105,000
Gas purchased—33 cars	.....	343,000
—Per ratio—22	231,000	.....
Total	240,000	448,000
March sales, loss and used	280,000	280,000
Balance on hand, March 31	(40,000)	168,000
Extra to balance—5 cars	52,500	.....
Adjusted inventory March 31	12,500	168,000
SUMMARY:		
Gas on hand—January 1	205,000	84,000
Gas purchased—Actual 137 cars	.....	1,442,000
—Per ratio—66 cars	693,000	.....
—Extra—45 cars	472,500	.....
Total	1,370,500	1,526,000
Sales, loss and used	1,358,000	1,358,000
Inventory, March 31	12,500	168,000

During the three months, 71 cars were received over ratio. Under ideal inventory and purchasing conditions, 45 cars over ratio would have been sufficient.

Adequate storage..."Anytime an operator works on a 3-to-1 or a 4-to-1 ratio, someone is going to have to pay for the privilege."

ing $1440 per year, utilized for only two months, gives only $240 worth of service. Unused service, then, costs $1200 per year. So for each extra tank car a supplier ships in excess of contract ratio, the extra tank car cost can be $1200, or 12 cents per gal."

Thus, anytime an operator works on a 3-to-1 or 4-to-1 ratio, someone is going to have to pay for the privilege!

Ideally, producers would like to see dealers smooth out their ratio so more and more tank cars can go on full-time duty the year around. But right now it's a little late to be trying to do anything about ratio. The only alternative left is to build up plant and consumer storage facilities to a maximum and then see that they are filled to the brim by October 1.

There's only two months left to do this, so obviously not much can be accomplished in building up customer storage. However, you're still going to be selling a lot of househeating between now and November 1. Adequate storage should go hand in hand with the sale. Is 500 gal. capacity enough? Could you work out a per-gal. price break with 1000-gal. tanks? Thermogas Inc. of Des Moines, Iowa, is one company actively pushing the larger size, and with excellent results!

Even if you're stuck for capacity this season, there's no reason why you can't fill everything up to the brim. This will involve an outlay of capital, to be sure, but consider how this outlay stacks up against the cost of running tank cars for peak-load service only: $1200 per year per car! That's an expense item of 12 cents per gal.—down the drain forever. Gas in storage, on the other hand, is either valuable inventory or valuable accounts receivable.

Many dealers seem to gag on inventory. What some of them may not appreciate is the fact that it's good loan security. Field warehousing, or "flooring" of merchandise, is a common practice and a sound one—especially in these times of expanding credit and rising prices. Dealers, who have made a study of it, have weighed the costs of building inventory —particularly on customer premises through the use of vapor meters—against the other factors involved in the situation. They found that a large inventory, in the long run, is good economy.

Dealers who balk at inventory, yet want to build consumer storage, have no alternative but to sell the gas at the time of filling. That inevitably means building accounts receivables. One dealer we know has been very successful with such a program—so successful, in fact, that his receivables are killing him! What he may not realize is that receivables themselves are saleable, or assignable, or, better yet, financible. Many financial firms have routine procedures for lending money on them.

All of this costs money, of course. Loans on accounts receivable may be chargeable at an interest rate of 1 per cent per month or more. Even if they cost 100 per cent, the deal would still be good—*if* the borrower could make *more* than 100 per cent for himself.

So it really boils down to a matter of economics. You have to weigh this against that, the one against the other, and a sum total of factors against another sum total of factors. Don't forget you're weighing costs of adequate storage—and very real costs they are too—against the possible loss of customers if you should run low on gas as well as the premium prices you must pay if you have to scrounge around for the needed peak-load gas. These costs are difficult to estimate in advance, because they are dependent upon a lot of unknowns.

Oxley offers an example of what adequate storage and late summer fill can mean in terms of peak-load tank car demand. His example is an actual case, taken from his own files. *Table 1* compares the operator's actual record with what Oxley terms "efficient" operation. Note that the primary factor was the lack of inventory at the beginning of the season. A secondary factor was the overestimation of needs late in the season, resulting in a surplus of scarce, peak-load gas on March 31.

The net result of the "inefficiency" was 26 cars over ratio!

Let's see what this might have meant in terms of "unused service." In January, purchases were 57 cars, 35 over ratio, but since 5 cars would have been needed to balance January with "efficient" operation, the overage was 30. In February, 47 cars were bought, 25 over ratio, but since 35 would have been needed anyway to balance, the adjusted-overage was 12. In March, the ratio was exceeded by 11, so deducting the 5 needed to balance, the overage was 6 cars.

By way of recap, then, the overages were 30, 12, and 6 for the three months. Theoretically, 6 cars were used for three months, 6 more were used two months, and 18 were used only one month. That's expensive transportation at $120 per month of unused service!

Thereby hangs a good part of the tale of the high cost of peak gas service. What to do about it?

It's now too late to build off-peak load for next winter.

The time is growing short for building more nearly adequate storage.

But there's still plenty of time to fill what you have in anticipation of next winter's needs.

And any old time is a good time to sharpen your pencil and do some advance planning for the problems you know you'll be facing in another three or four months. ■

A workman at Thermogas Co., Des Moines, Iowa, LPG firm, examines one of the new temperature compensating meters. The firm is installing these meters for 1500 of its 6000 bulk tank customers.

Designed to lick perennial problem,

temperature compensating meters to be tried by large LPG dealer

WILLIAM W. CLARK • Editor

VAPOR metering of liquefied petroleum gases, while it has many advantages, poses a problem. Dealers who use meters know that a revenue loss of up to 5 per cent or more can be incurred, due to a constant mass of gas changing its volume with changes in ambient and meter temperatures.

A meter measures the volume which passes through it and measures it accurately within a temperature range determined by its diaphragms. However, with changing temperatures the mass is not constant with the unit volume. The volume-measuring meter cannot accurately sense this "elastic" mass. The operator pays for this "disappearing gas," but it never gets billed to the customer.

Generally speaking, there are two variables that must be considered in any metered distribution system. The first is the temperature effect on volume. Temperature is variable and unpredictable. Also, the flow at a given temperature is an unknown parameter, especially so in a heating load which is weighted at low temperatures. The refrigeration effect of evaporating liquid "gas" further aggravates any possibility of a mathematical computation.

The second variable is delivery pressure. Here again, a constant mass has a variable volume according to the pressure. This pressure effect can be held relatively constant by regulation. A factor can be used to correct the volume at the measuring pressure to a desired base pressure. This includes altitude variations.

Today there are meters available to change all that —temperature compensating meters. Otherwise iden-

tical with standard meters, they have a temperature-sensing element which automatically adjusts the calibration of the meter to changing temperatures. Thus, the meter will register or record a volume automatically corrected to the pre-selected base temperature.

These meters have already received exhaustive tests by several gas utilities in the cold northern regions. They show every indication of accuracy within close tolerances.

Now they are beginning to catch on with LPG operators. One of the first such companies to place an order for them was Thermogas Co. (formerly Rapid Thermogas), with headquarters in Des Moines, Iowa.

It's interesting to note that Thermogas has never before used vapor meters in any quantities. It would seem logical to suppose that what has held them back has been the lack of compensating meters. But Vice President Harlan Williams denies this. The company would have gone to meters anyway—but as long as the new models were available they decided to make the transition directly to them.

Other companies may feel more strongly about the matter, however. They may find that a pre-corrected reading will save clerical time and reduce the possibility of errors.

The development of the temperature compensating meter was brought about by the needs of utilities for an accurate system of outdoor metering. Vapor meters on the customer's premises are, obviously, a "must" for gas utilities. But in the colder climates, they always had to be installed inside the house—usually in the basement or in a utility room. This has always been viewed as an inescapable inconvenience. The difficulties are obvious:

1. A locked door meant the meter reader would have to come back a second time, estimate usage for later correction, or leave a self-read card for the customer to fill in and return.

2. If the customer was home, the reader had to knock or ring to gain entrance. If there was a sleeping infant in the house, he incurred the wrath of a tired mother.

3. In an emergency, turnoffs could not be conveniently made.

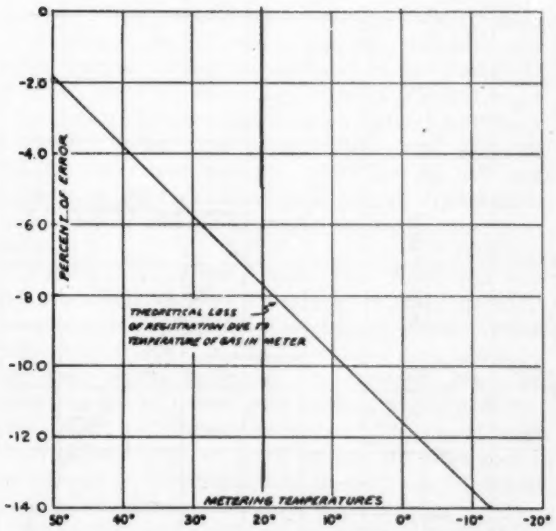


Fig. 1. Line shows theoretical loss in registration for a typical leather diaphragmed meter as the metering temperature is reduced.

These are only a few of the many—sometimes costly—reasons why utilities wanted to find a simple, inexpensive, and reliable method for eliminating inside meter-reading.

Several years ago, means were devised for reading the meter on the outside without moving the meter itself. One employed glass blocks set in the wall with the meter index facing the blocks so it could be read from the outside. Another made use of a remote reading index, or "repeater." But these methods were costly, and never caught on.

Concurrent work with meter housings which would protect meters from the elements also failed to provide the total answer.

In the final analysis, it was clear that utilities would not be satisfied until they had a meter that could be installed outdoors, in the open, and still give accurate readings with respect to a single base temperature.

The problem of the "elastic" volume is stated in Charles' law: "The volumes assumed by a given mass of gas at different temperatures, the pressure remaining constant, are, within moderate ranges of temperature, directly proportional to the corresponding absolute temperatures."

A meter is constructed to give accurate registration of the volume passing through it, whatever the temperature within the temperature limitations of the diaphragms. The volume of a unit mass of gas to 60 deg. F will change 1/520 of its volume for each deg. F. Thus, at 50 deg. F the volume will be approximately 2 per cent less and at minus 12 deg. F it will be 14 per cent less.—This drop in volume is linear, as shown in *Fig. 1.*

The standard meter faithfully records these volumes at the measuring temperature and the loss is due to the "elastic" volume.

For a long time, the question of whether flowing gas temperatures would approach ambient air temperatures was left unsettled. In other words, if gas temperatures were relatively unaffected by ambient temperatures at the meter, the problem would be much less severe. But cold box tests conducted by Northern Illinois Gas Co. established the fact that metering temperature and ambient temperature are, for practical purposes, identical.

With gas frequently measured at low temperatures (particularly for heating), and the refrigeration effect of evaporation, the "average measuring" temperature is usually considerably below the generally accepted base temperature of 60 deg. F. Thus losses are generally incurred, rather than gains.

Leather-diaphragmed meters have a tendency to run progressively faster as the temperature drops due to the stiffening of the diaphragms. This partially offsets the loss—see *Fig. 2.* This effect varies with the leather used to make the diaphragm, the diaphragm dressing and the service of the meter. This speed-up can vary from a negligible amount up

to a possible maximum of 4 to 5 per cent. This effect generally decreases with the service life of the meter.

However, there was another problem which made leather-diaphragmed meters less than completely desirable for outside installations. At a temperature of 35 deg. F, the sudden application of a 100-cu-ft-per-hour load would cause such a rapid pressure drop that the pilot flame could be extinguished.

This problem did not exist with meters diaphragmed with low-temperature synthetic materials. The pressure drop was insufficient to extinguish pilot lights. Therefore, synthetic diphragms would appear to be the solution.

Dependent on the synthetic material, such diaphragms are unaffected by temperature. A standard meter so fitted will measure accurately the volume passing through it, irrespective of temperature, as long as the temperature does not go below the effectiveness of the diaphragm. D-7 Duramic diaphragms, specially developed for low-temperature use, will, in a standard meter, give a constant proof down to minus 30 deg. F and even lower.

The obvious answer, then, was a synthetic-diaphragmed meter with a built-in temperature compensating mechanism. Such a meter was conceived by American Meter Co.

The temperature compensating tangent which accomplishes the correction is shown diagrammatically in *Fig. 3*. Stamping "F" is soldered to the crank and carries the check rate adjusting screws. Part "G," which pivots on "F," carries the stroke adjustment, which can be set and locked with lock nuts. Two bimetallic strips are satisfactorily rigid, eliminating possibility of error from this source.

The strips sense the measuring temperature. With increasing temperatures, they move the tangent wrist away from the crank, increasing the diaphragm stroke and allowing the meter to pass a larger volume of gas with each revolution. With decreasing temperatures, the opposite effect is obtained.

If this new meter is important to gas utilities, it is no less important to LPG operators. They are faced with a metering problem which—except for periods of peak shaving, etc.—utilities generally do not have: variations in the chemical content of the gas.

Thermogas is a company that operates over a widespread area which includes practically all of Iowa, plus parts of northern Illinois and southern Wisconsin. Although winters are cold throughout the entire area, local temperatures vary rather sharply. For example, usage in southern Iowa averages about 1500 gal. per year, whereas in northern Iowa and Wisconsin it is closer to 2000 gal.—a difference of one-third. This is primarily because of difference in temperatures. Therefore, temperature correction becomes a local matter.

Why should Thermogas turn to metered service, anyway?

The advantages of metering have been well defined. Whenever a company contemplates making the change, it must always weigh the advantages against the capital investment required. In the case of Thermogas, one advantage stood out among all others; the fact that meters are one more means for *keeping* a customer.

More than one-quarter century old and with 20,000 retail customers plus about 150,000 served by its dealer organization, Thermogas has moved progressively toward this idea of permanence. First, it was in the bottled gas business almost solely. But the opportunities for large-usage customers, coupled with the competitive situation, prompted a gradual switch to bulk operations. Today, all outlets dispense in bulk

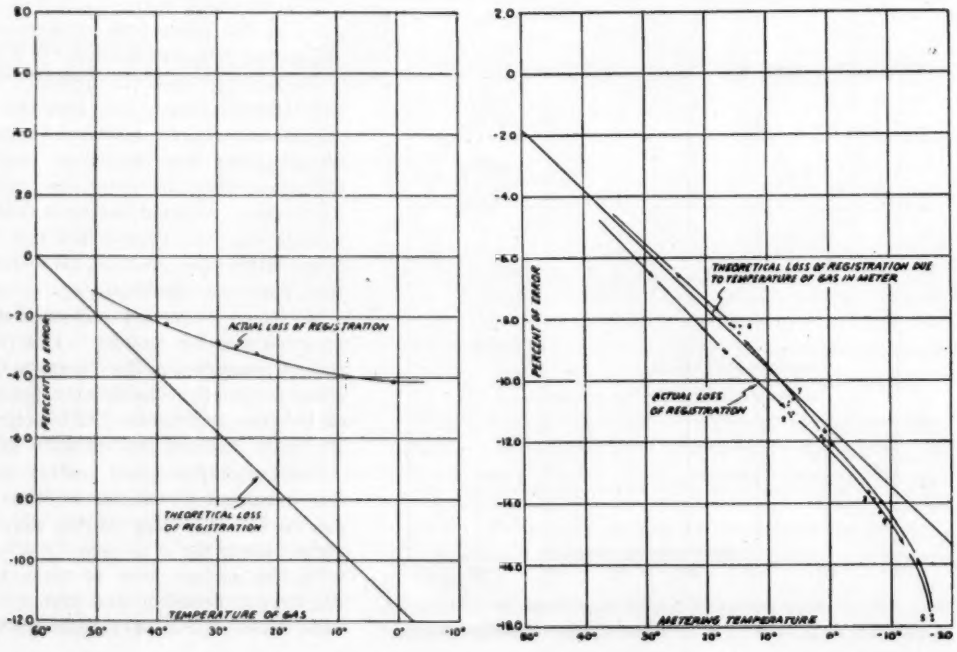

PERCENT OF ERROR
ACTUAL LOSS OF REGISTRATION
THEORETICAL LOSS OF REGISTRATION
TEMPERATURE OF GAS
60° 50° 40° 30° 20° 10° 0° -10°
THEORETICAL LOSS OF REGISTRATION DUE TO TEMPERATURE OF GAS IN METER
ACTUAL LOSS OF REGISTRATION
METERING TEMPERATURE

Fig. 2. Typical curves showing theoretical vs. actual loss of registration at very low temperature for a hardcase meter with standard leather diaphragm (left) and hardcase meter with synthetic diaphragm (right).

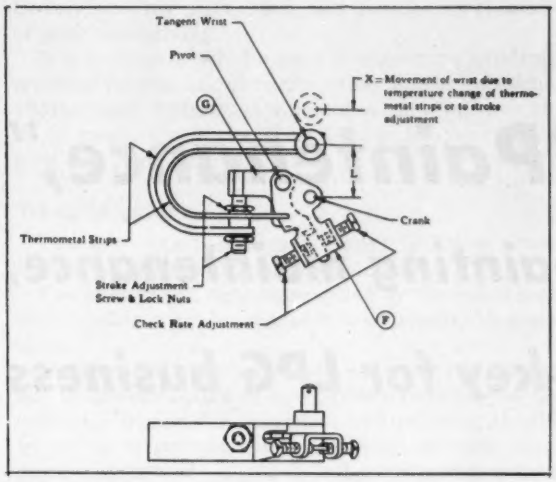


Fig. 3. The temperature compensating tangent is shown in this drawing (left). Stamping "F" is soldered to the crank and carries the check rate adjusting screws. Part "G," which pivots on "F," carries the stroke adjustment, which can be set and locked with lock nuts. The tangent is also shown installed in an American meter (right). Front of meter is at bottom.

—and of the 20,000 direct customers, more than 6000 have tanks. Because of high usage, four out of five are equipped with 1000-gal. tanks. The others almost entirely have 500-gal. tanks.

Like many other dealers, Thermogas originally sold its tanks. As so many dealers have discovered, this is no way to keep customers. Last year, the company began leasing tanks, found it an excellent way to prevent other dealers from pirating customers. But, while this set-up has the added advantage of cutting the customer's original outlay, he must still lay out the money for installation and a starting inventory of up to 1000 gal.

With metering, his inventory cost is wiped out.

The inventory burden falls upon the company, of course. This could be considerable—particularly if all 6000 were to be switched to meters. Actually, only 1500 changeovers are contemplated in the immediate future. However, there are inherent advantages in this system. Summer fill becomes a matter of company judgment, rather than customer demands. You can fill the tanks whenever you wish, thereby not only expediting delivery scheduling but also increasing summer take and improving your ratio very measurably.

There's another advantage, too. When you are doing a credit business, a heavy fill without metering strains the customer's pursestrings, so you *must* stretch his credit a bit. In Thermogas' case, about 50 per cent of the customers are farmers. Many of them are not in a very good position to pay even 30-day "cash" for summer purchases. They must wait until harvest time to begin paying off large credit purchases, so Thermogas ends up carrying the financial burden anyway.

Many dealers feel it's better to have this gas in inventory—even on customers' premises—than to have a slow-pay credit account on the books. This gives them a tighter control on credit, because, as the farmer uses the gas, he pays for it. If he falls too far behind, it is a simple matter to shut off service.

Thermogas will have its customers read their own meters each month. These readings will be periodically justified by the driver, when he makes a delivery.

The meters will be self-amortizing by the addition of an increment in the rate schedules.

At present, with non-metered service, Thermogas has charged a tank rental of $36 per year for 500-gal. tanks and $48 per year for 1000-gal. tanks. Because the company is interested in increasing individual consumer storage, persons with 1000-gal. tanks get a 1-cent-per-gal. price break. Thus, any customer who uses more than 1200 gal. per year can benefit by having the larger tank.

With metering, tank rentals will remain the same, but one-half cent will be added to the price of the gas. This additional charge is justified—to the customer—by the convenience of metering and the advantage of not tying up his money in inventory. He will continue to pay the present tank rental charges. The entire rental, including tank and meter, can be added to the gas rate and paid for over the entire year.

In any case, Thermogas will recoup a minimum of $3.50 a year for the use of the meter. This is more than 11 per cent of the initial cost.

Thermogas confidently expects the temperature compensated meters to perform well within the limits of the accuracy tolerance, but nothing is being left to chance. From time to time, accurate checks will be made of meter readings as against the customers' consignment card to make sure that all gas going into the tank is being charged out. Whether the system works out as well as is hoped will be known a lot better a year from now. ■

"Paintenance," proper painting maintenance, is success-key for LPG business

"Paintenance"—the art of maintaining your property through proper painting policies—can be a highly important key to business success—especially for the LPG business. Dealing with an invisible product, as you are, the most tangible objects you can show your customers are your cylinders, your tanks, and your trucks—all items which are painted. The very quality of that paint may be the only quality factor they ever perceive in connection with your product. At the same time, these painted surfaces and the messages they bear may quite probably be the cheapest—if not the best—form of advertising for the average dealer. But perhaps most important of all is that most of your investment is in metal things which will deteriorate if not protected with paint. Paintenance, therefore, comes into the dollars-and-cents, killing-two-birds-with-one-stone category as it protects your investment and cuts maintenance costs.

In this article, paint expert Michael E. Spatz, president of Spatz Paint Industries Inc., covers all aspects of paintenance: when to paint, paint selection, painting different types of objects, methods of painting, and estimating the amount needed.

CERTAINLY any time you neglect your equipment, you are inviting deterioration of one of your biggest investments. Because such equipment represents cold cash out of your pocket, the need for protecting it with proper maintenance — including paint maintenance—is quite evident. Not so evident, however, is the fact that **proper** paint maintenance can save a lot more of that cold cash than slipshod paint maintenance.

Even less evident are the need to protect your company's good name and the ability of paint maintenance to not only protect but enhance that name. Stop and think of all the money and effort you have spent in developing your "company image," as the advertising people call it. Selling your customers on using your service and keeping them sold is an investment you have made over a period of years. It is a definite asset which needs protection because its value can be easily destroyed—or compounded.

The neat, clean appearance of your firm's cylinders, tanks, trucks, and other equipment indicates to your customers that you are a service organization. It further indicates that you take pride in keeping your equipment in top shape, not only for your own benefit, but because you realize that, by its very location, it becomes a part of their home. Nice looking tanks and cylinders encourage customers to help keep them in good condition, reporting the first signs of rust and paint deterioration, for example. The appearance of your equipment, particularly that which graces their property, may become another "plus" for your company when they conversationally compare it with concerns serving their friends and neighbors. Paint maintenance can also be the first wedge in your consumer customer education program —if you explain that you use the lighter, brighter colors to cut down evaporation losses.

These same effects of proper paintenance also apply to the general public, which includes your future customers. In addition, there is the very real benefit of the greatly increased identification that is derived from repeating the color combination of your tanks and cylinders on your trucks, signs, office, sta-

tionery, mailing pieces, etc., and mentioning it in all of your advertising.

It is surprising what a good maintenance painting program—when added to the other public relations efforts most wideawake companies now make—can do to create the image of leadership for your products and your company.

When to paint

The first question usually asked is "How often should tanks and cylinders be painted?"

The answer can only be supplied by the individual dealer after a prolonged period of regular inspections.

Maintenance painting should not be left to chance nor to the discretion of one particular employee. A definite schedule for inspection and painting should be set up in your company files—the very day each piece is delivered. If you do not have such a system in operation, set it up right away, for you're losing money every day you delay.

Setting up such a file is relatively simple. Simply have a supply of paint schedule cards mimeographed or offset printed and fill out a card for each piece of equipment Your card may be identical to the one accompanying this article, or you can modify it to suit your particular situation.

Inaugurating such a system immediately places control and responsibility for inspection and painting on management. You or a responsible assistant will thereafter make all painting decisions.

Exactly when and how often you paint depends on two sets of factors. One set concerns the piece of equipment, itself: when and how it was last painted, the care it received when new, its location and mounting, its usage, etc. The second set involves the air conditions around the equipment and often varies considerably from year to year: temperature, humidity, salt content, chemical fumes, air pollution, etc.

The safest procedure to follow is to inspect all equipment at six-month intervals for at least the first 18 months of the program.

Selecting the paint

Not just any paint will do for your program. It's a paint industry axiom—proved by years of field experience and laboratory testing—that just because an ordinary paint will cover a surface, it does not follow that that paint is adequate for the purpose.

Quite to the contrary, it has been found that the ingredients contained in a coating designed to do one type of job may have an adverse effect if applied to do another type. Actually, experimentation has determined that paint misapplication can speed up or even start deterioration!

To be effective, a paint must be compounded to fight off a given group of hazards, which are usually associated with particular useages. Paint used to coat LPG tanks and cylinders must meet a more-or-less standard set of requirements. In addition, it must retain its brilliance and reflectivity *much longer* than ordinary paints.

The words, "much longer," are italicized because in most cases, the less expensive paints may shine the brightest when fresh, but dull quickly.

Paint manufacturers interested in the LPG industry's maintenance painting problems have scientifically formulated coatings containing the necessary

Call-up Month _____

Identification Number _____ Manufacturer _____ Size _____

Date Received & Inspected _____ By _____ Primer? _____ Unfinished? _____

Remarks: (Use sketch): _____

Work Dates: Primer _____ Finish Coat _____ Delivered _____

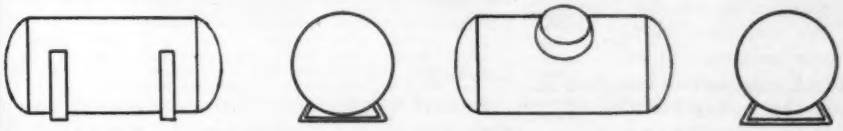
Customer _____ Address _____

First Inspection _____ Last Inspection _____ Next Inspection _____

First Repaint _____ Last Repaint _____ Next Repaint _____

Use pencil to indicate areas needing special attention. Erase when work completed.

Left & Bottom: Front: Right & Top: Rear:



Inspection Notes: _____

This suggested 4 x 6 in. paint schedule card may be modified to dealer's needs, then inexpensively reproduced by either mimeograph or offset lithograph. A card should be filled out for every piece of dealer equipment, including all tanks and cylinders. Note drawings to be filled in (in pencil) by inspector, then erased when work is completed. Individual maintaining paint schedule file notes call-up month on tab.

What is Rust?

Rust is iron oxide and is ordinarily seen on any iron and steel surface exposed to the air. Rust forms on these metals as a result of electro-chemical action, which is produced by four factors:

1. **ANODES,** which comprise areas of *positive* electrolytic poles.
2. **CATHODES,** which comprise areas of *negative* electrolytic poles.
   (Note: Anodes and cathodes are always present on ferrous surfaces, due to chemical and physical irregularities.)
3. **ELECTROLYTE,** which can be any type of moisture, and which triggers the action between the anodes and cathodes.
4. **OXYGEN,** supplied by the air.

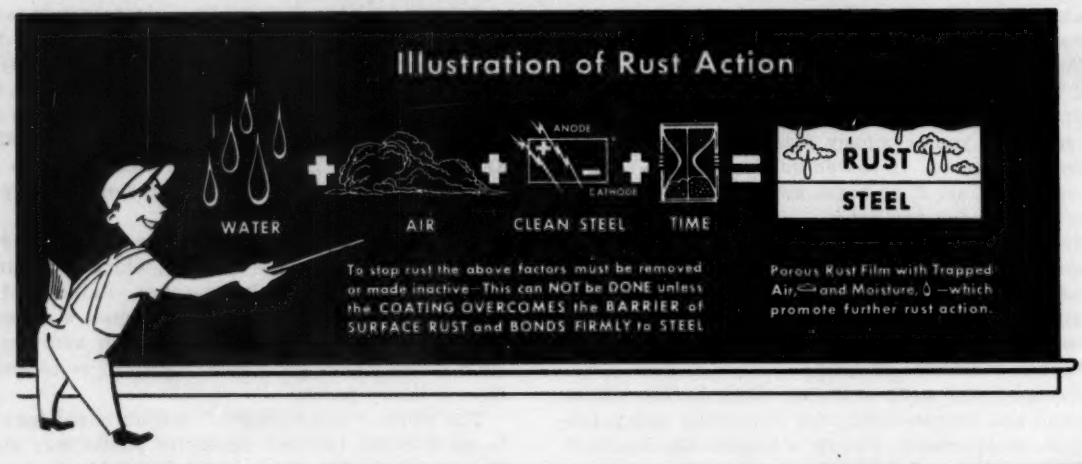


Illustration of Rust Action
WATER
AIR
ANODE
CATHODE
CLEAN STEEL
TIME
RUST
STEEL
To stop rust the above factors must be removed or made inactive—This can NOT be DONE unless the COATING OVERCOMES the BARRIER of SURFACE RUST and BONDS FIRMLY to STEEL
Porous Rust Film with Trapped Air, and Moisture, —which promote further rust action.

Rust, one of the LPG dealer's chronic irritations, is unveiled in this pictograph produced by Flood Co., manufacturers of Penetrol.

ingredients to cope with the industry's particular conditions. After years of field experience plus long hours of laboratory experimentation, they have developed the much needed products, the primers and the finish coatings. In the latter category, the choice is between aluminum paints and enamels.

Aluminum paints

There is a very substantial difference in aluminum paints. This form of coating actually consists of minute particles of aluminum suspended in a liquid vehicle. These particles arrange themselves on top of the solution to form a bright finish—a floating-and-sticking-together process that is called leafing. The better aluminum paints contain much smaller particles than the cheaper ones and last much longer because there is more vehicle to hold down each of the particles. Because the cheaper paints have larger particles and therefore less vehicle on the surface, they shine more brightly when new, but the shine disappears quickly when the stretched-too-far vehicle fails to maintain its grip on the particles.

Prior to the development of new ingredients that will work with and support the leafing abilities of aluminum, the only criterion for selecting or mixing aluminum coatings was the leafing ability of the formulation, once it had been compounded.

Now, recently discovered ingredients do more than bring out the leafing abilities of aluminum. They also have the ability to combine with aluminum and other ingredients when applied, but to separate from these ingredients after application, leaving the other ingredients at the surface while penetrating like a true rust inhibitor. Because the resulting protective film that covers the aluminum particles is one-third thicker than that of ordinary aluminum paints, the aluminum particles stay bright and untarnished nearly twice as long.

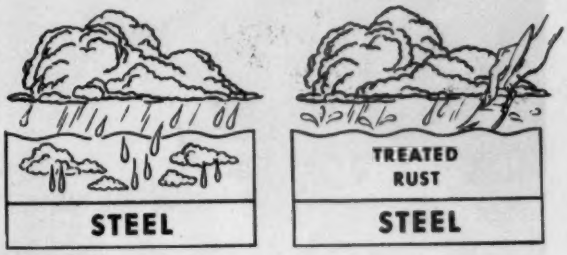
One of these recently-discovered ingredients is strontium chromate. Aluminum paints containing this compound are not only on the market, but are available in colors.

Test panels comparing strontium chromate aluminum paint with other types of aluminum paint clearly indicate a definite difference. As shown in the accompanying illustration of a test panel group submitted to 18 months exposure in an industrial area, a single coat of strontium chromate aluminum paint proved markedly more effective than a two-coat application using conventional aluminum paint and far superior to one coat of conventional aluminum paint.

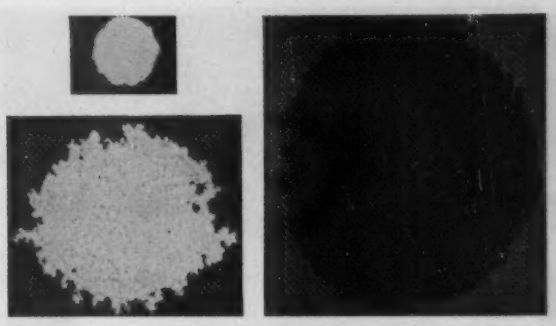
Enamels

Enamel finishes have been quite popular for bulk tanks and other LPG equipment for many years. This popularity was due primarily to their fast drying action (from fast drying vehicles) and the great range of colors in which they are available.

Because of this long-time popularity, enamels especially formulated for the LPG industry have been on the market for some time.



Rusty iron and steel surfaces have a spongy, scaly, layer of iron oxide (left). This highly absorptive surface soaks up and traps corrosive liquids, moisture and air, which eat deeper and deeper into the raw metal. When treated with a rust inhibitive penetrating solvent, the layer of rust actually becomes a waterproof protective layer (right). The solvent penetrates deep down, isolating each tiny layer of rust, displacing air and moisture and protecting the raw metal from atmospheric conditions. This treated rust layer actually becomes an ideal iron oxide foundation to which paint bonds well.



The remarkable covering, spreading, and penetrating powers of a rust inhibitive penetrating solvent (Penetrol, in this case) are shown here. Compare the rust area covered by a drop of plain primer paint (upper left) with that covered by a drop of the same paint when 50 per cent solvent is added (lower left). The untreated paint stays in a thick drop on top of the rust while the treated paint spreads and works in, the result of the penetrating power displayed (right) by one drop of undiluted solvent.

Enamels selected for painting LPG tanks and other equipment should be composed of pure alkyd liquids and have a content of at least 3¼ lb of pure titanium dioxide per gallon.

The enamel selected should be easy to apply, give complete hiding in one coat, resist chalking, and have great elasticity. The last quality is of great importance because a non-elastic paint chips readily, exposing the metal to the elements and allowing rusting to begin.

Painting old tanks

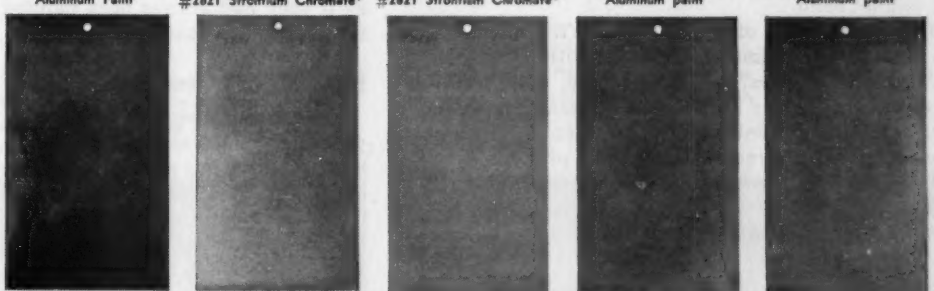
Your biggest paint maintenance problem may well be the bulk tanks in use on your customers' property, since they are remote from your main facility and are too large to conveniently bring in for refinishing. While some of these tanks will undoubtedly be in worse shape than others, they can all be placed in an approximately equally good state of repair if given the same basic treatment.

The first job is to remove as much rust as possible by hand sanding. Loose rust scale removal is the prime objective. But if you want to, you can sand until you reach bare metal.

Regardless of how far you go with the sanding operation, your next step is to soak the rusted areas with a rust inhibitive penetrating solvent. (We recommend "Penetrol," a clear air-drying oil, for use as

Exterior Weather Exposure of Aluminum Paints with and without Strontium Chromate No. 2821**

EIGHTEEN MONTHS EXPOSURE AT LOUISVILLE, KENTUCKY INDUSTRIAL AREA →



SINGLE COAT Conventional Aluminum Paint	SINGLE COAT Aluminum Paint with ½ lb. per gallon #2821 Strontium Chromate*	SINGLE COAT Aluminum Paint with 1 lb. per gallon #2821 Strontium Chromate*	2 COAT SYSTEM 1st coat primer 2nd coat conventional Aluminum paint	2 COAT SYSTEM 1st coat primer 2nd coat conventional Aluminum paint
Single coat of aluminum paint containing 1½ pounds Reynolds' #30 Aluminum paste per gallon.	Single coat of aluminum paint containing 1½ pounds Reynolds' #30 Aluminum paste per gallon, plus ½ pound No. 2821 Strontium Chromate.	Single coat of aluminum paint containing 1½ pounds Reynolds' #30 Aluminum paste per gallon, plus 1 pound No. 2821 Strontium Chromate.	Zinc Dust primer 1st coat; 2nd coat of aluminum paint with 1½ lbs per gallon Reynolds' #30 Paste.	Zinc Chromate-Red Oxide primer 1st coat; 2nd coat of aluminum paint with 1½ lbs. per gallon #30 Reynolds Paste.

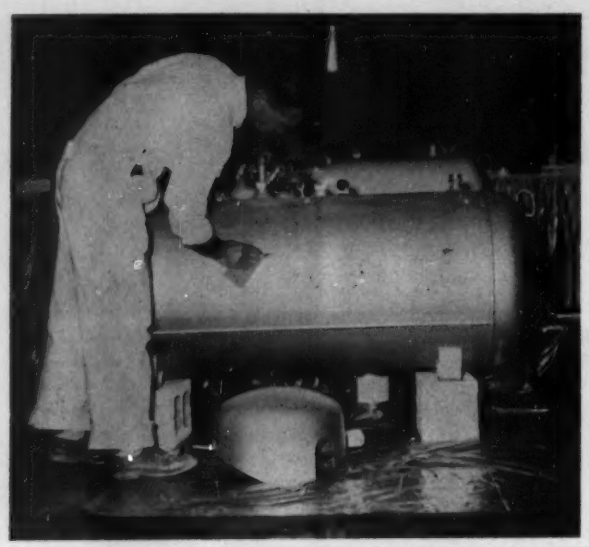
Application of paints: Metal panels were solvent cleaned. Single coats are 1 1/4 mils thick. The 2 coat systems have .9 mils of primer plus 1 1/4 mil of conventional aluminum paint. All films were applied by spray. All were air dried.

Aluminum paint composition: Vehicle meets TTV-81 b, Type II. It is a coumarone-indene varnish, 40 gallons in length, of which 32 gallons is dehydrated castor, and 8 gallons is fish oil.

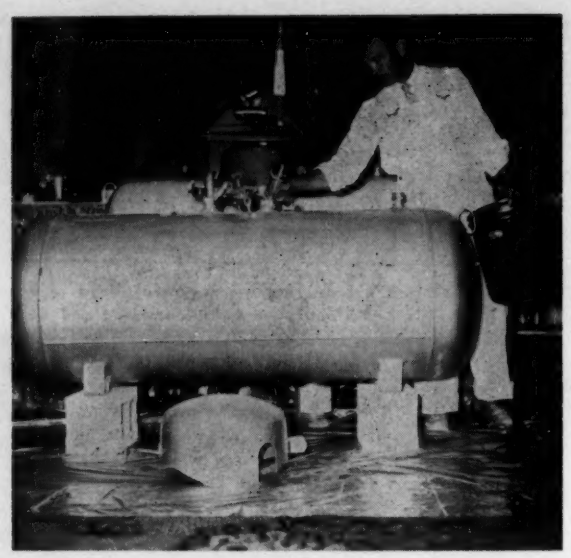
*U. S. Patent No. 2701772. For royalty free paint license see Reynolds Metals Co., Louisville, Ky.

**No. 2821 Strontium Chromate Manufactured by Kentucky Color & Chemical Co., Louisville 12, Ky.

The effectiveness of strontium chromate aluminum paints in resisting industrial atmospheric conditions is graphically shown in this test panel group, submitted by Kentucky Color & Chemical Co., producers of strontium chromate.



From preliminary sanding (above) to finished paint job in just 12 minutes is the remarkable demonstration shown in this sequence of photos taken at the recent Missouri-Illinois LPGA convention.



Applying rust inhibitive penetrating solvent to the sanded and impossible-to-sand rusted areas is the next step for the painter, who had painted only one other tank (shown in background) in his life.

a penetrating oil or a paint additive.) Use a rag, paint mop or brush to apply this solvent.

This oily liquid does three things. It displaces moisture and air from the porous rust coating by thoroughly wetting them to separate them from each other and from the steel, thus turning the rust into an actual protective coat. In intimate contact with the steel, it insulates anodic from cathodic areas to eliminate the possibility of further electro-chemical action, the rust-producing process. When hardened, it incorporates the rust as a pigment within its own film and bonds tenaciously to the underlying steel, producing an ideal iron oxide foundation to which paints bond well.

Use a rag, paint mop, or brush to apply, being especially careful to reach out-of-the-way areas that you cannot sand.

For the purposes of this article, we'll assume that the tank at some time was treated with a red-rust-inhibitive primer paint. In that case, only certain areas should have to be sanded and treated with the rust inhibitor solvent. Your next step is to patch these areas with a red-rust inhibitive primer.

The tank may then be finished with either an aluminum or an enamel paint. As mentioned earlier, the aluminum paint should have a rust inhibitor such as strontium chromate.

If an oil base paint is decided upon, combine it with a rust inhibitive solvent instead of a regular paint thinner. This will help the paint spread and work into any remaining rusty areas instead of sitting on top of the rust. The percentage of rust inhibitive solvent used should be at least in proportion to the percentage of rusted area on the tank. For example, add 25 per cent if the tank is 25 per cent rusted.

The foot-mounting rings of vertical tanks are subjected to unusual combinations of temperature and humidity, and often never have an opportunity to dry thoroughly because of their proximity to the ground. Therefore, they should be given a special treatment: another liberal application of rust inhibitive solvent, applied between the primer and finish coats. A good rule to follow is two coats of solvent within 60 days (under good weather conditions) followed—at the first opportunity—by a finish coat. Swab the rings thoroughly, getting at the inside through the weep cutouts.

If you diligently follow these suggestions, you will soon have your equipment in excellent condition. You can enjoy the reassuring thought that the life of this equipment has been lengthened considerably. In the case of relatively new tanks, you can rest assured that their life span will be approximately the same as if they had always been painted according to the recommended schedule.

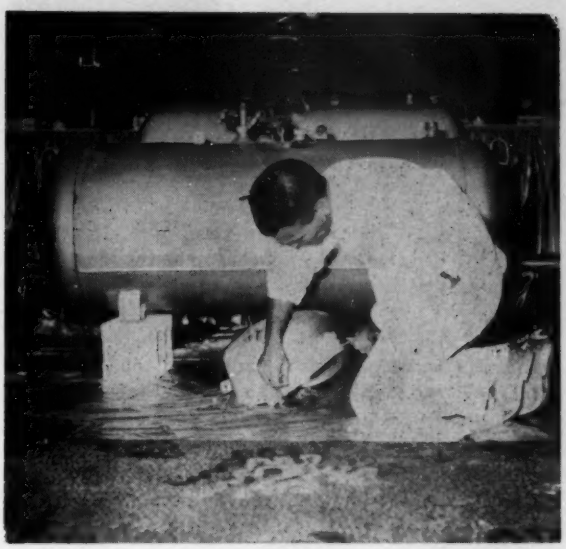
Painting new tanks

Your brand new tanks should be placed under the program immediately. Depending on whether the manufacturer has applied a prime coat, either of two different procedures should be instituted upon arrival.

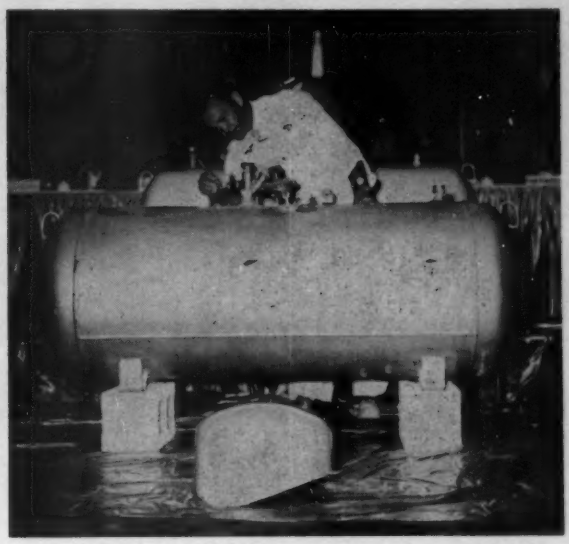
If a primer was applied, a complete inspection should be made to determine its condition. Any areas that may have been scratched and become rusted should be immediately treated with a rust inhibitive solvent followed by a primer patch.

In the case of a clean, bare metal tank, the first step is a degreasing bath to remove grease, tars, and other foreign matter that may have accumulated on the surface en route. Naphtha or similar degreasing liquid can be sponged on or applied by any other convenient method.

A red-rust-inhibitive primer should then be applied. Be sure it contains zinc chromate and red



Actual painting begins with a contrasting coat for the bonnet, applied by brush. This demonstration was provided by Spatz Paint Industries, Inc.



After the bonnet is finished, the painter begins the tank, itself. He starts with the hard-to-reach places, around regulators, hangers, feet, etc., using a brush to cover these relatively small areas.

oxide. If necessary, you can thin this prime coat with ordinary paint thinner or mineral spirits.

Ordinary weather conditions would then permit you to apply the finish coat within 24 hours.

Painting cylinders

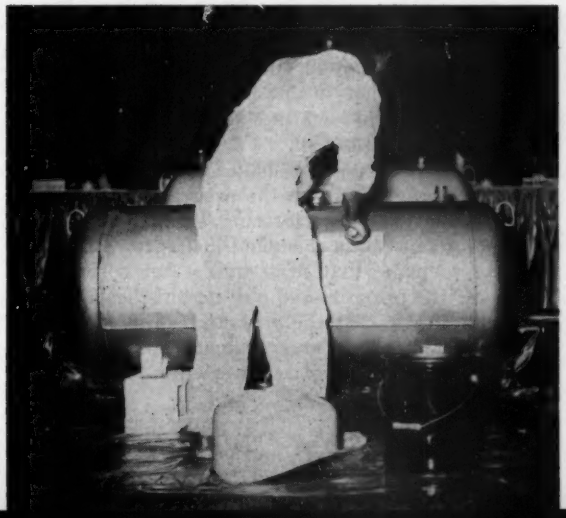
All painting and preparation tips in the previous sections also apply to cylinders, including the reminder not to forget the foot-mounting rings.

With cylinders, however, there are two particular factors that should be taken into account when making the aluminum-paint-or-enamel decision. First, the amount of handling that cylinders are usually subjected to greatly increases the early possibility of abrasion and chipping; and enamels are much more subject to such wear than are aluminum paints. Second, if you are set up to refinish cylinders on a mass production basis, fast drying aluminum paints may be preferable.

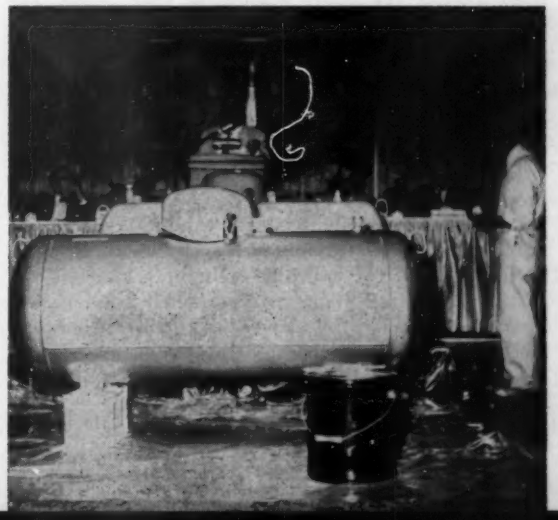
If you decide on enamel, follow the same recommendations made for tanks. The enamel will undoubtedly have to be thinned down, but in this case, you can use either a rust inhibitive solvent or mineral spirits. If you decide on aluminum paint, you will have to make a secondary decision—to repaint on a mass production basis or a one-at-a-time basis. In the latter case, you use the same aluminum paint you would use for tanks.

On the other hand, you may either have—or plan to install—a spray booth to refinish cylinders at least every other time they are refilled. In that case, a cost factor enters and you will probably want a fast-drying aluminum paint to speed production. Make sure the paint contains sufficient aluminum

With all the preliminaries out of the way, the painter goes to work with the roller, "the best painting device yet found for tanks." Note that he works from a 5-gal. bucket (in which he has placed a grid on which to "work" the roller).



Twelve minutes after the first photo was taken, the entire job is completed! The painting, itself, took only five minutes, about the time it takes to fill the average tank, which is the size shown here. (500 gal.).



The ten-piece paint rolling kit author Spatz recommends includes: four roller covers, two rollers, two 4-ft extension poles, one grid to place in 5 gal. bucket, and one metal tray.

paste to allow thinning up to one-third—for example, 1 gal. of mineral spirits or xylol (a benzene-derivative solvent) to every 2 gal. of paint. This will assure a tough, bright aluminum finish with some resistance to atmospheric hazards.

Painting methods

Four different methods of paint application may be used by the LPG dealer: spraying, roller painting, dipping, and brushing. Each has its place, the choice depending upon the answers to four questions: What is to be painted? When is it to be painted? Where will it be painted? Who will do the painting?

Spraying—One of the relatively new mass production methods of painting, spraying receives both our approval and out disapproval: "yes" for cylinders, "no" for tanks. When you want to paint a large number of cylinders—perhaps on an every-other-refill schedule—then a spray booth will really pay off. For tanks, however, we don't recommend spraying—under any conditions. Because the coat of paint covering a tank is supposed to be semi-permanent, it should have considerable thickness—several times that of a spray coat, meaning that several sprayings would be necessary. Even if a fairly large spray booth were set up in a plant, it would be much quicker to apply a single coat of sufficient thickness with a roller. Spray painting in the field has been tried despite the above argument. Our "No's" are even louder here. Either you have to use the totally illegal and unsafe method of hooking up the spray equipment to your truck's pumping equipment, or you use the legal and safe—but unrecommended—method of "borrowing" the customer's electricity. In either case, you inconvenience the customer and spray paint on his grass or other portions of his property.

Roller Painting—This is the best single method of paint application. Outside of a spray booth, it is the fastest method for painting cylinders—and has the further advantage of providing a much heavier coat. It is recommended for all cylinder painting—unless you now have a spray booth or unless heavy cylinder usage dictates frequent refinishing of a considerable number of cylinders and really high production methods are obviously called for. For tanks, roller painting is unexcelled—either for in the plant or in the field painting. One roller applied coat will cover and the job is done very quickly. At the recent Missouri-Illinois LPGA convention, we proved that a man who had never painted a tank before could completely cover the average tank (500 gal.) in five minutes, about the time it would take to fill that tank with LPG. This certainly appears to be the ideal solution to tank paintenance. We believe every bulk truck should have a roller painting equipment and offer a complete ten-piece kit for less than $13.

Brush Painting—With the advent of the spray gun and the later addition of the roller, the brush has been relegated to minimum usage. However, it should be a part of every delivery truck's service kit. A brush comes in handy for swabbing rust spots with rust inhibitive solvents. For painting purposes, it can be used for such odd jobs as valve cover interiors and hinges.

Dip Painting—In-the-plant painting of cylinders by the dip-roll method is relatively new and has some merit. The big advantage is that the entire cylinder, including the foot-mounting ring, can be painted in one operation. The twin disadvantages of this system are that cylinder buoyancy demands immersion equipment and greater paint losses are possible. Both of these cost items will probably be taken care of by improvements.

Estimating the amount needed

The quantity of paint needed to cover a tank depends greatly upon the surface condition of the tanks and the methods of application. The chart below is a general estimate, based upon the average covering abilities of primer (350 sq ft per gal.), enamel (350 sq ft per gal.), and aluminum paint (400 sq ft per gal.).

Tank Size (Gal.)	Surface (Sq. Ft.)	Primer	Enamel	Aluminum Paint
500	116	1¼ qt.	1¼ qt.	1 qt.+
1,000	225	1 gal.	1 gal.	1 gal.
6,000	725	3 gal.	3 gal.	2 gal.
8,000	860	3 gal.	3 gal.	2 gal.
10,000	1,000	3 gal.	3 gal.	3 gal.
12,000	1,160	4 gal.	4 gal.	3 gal.
18,000	1,250	4 gal.	4 gal.	4 gal.
30,000	2,000	6 gal.	6 gal.	5 gal.

A final word

Keep in mind that in your organization you will find some resistance to this planned program to get your old equipment back into shape. This resistance may even come from you.

We can only urge you to make the initial effort now and to follow through on the program immediately. Thinking of your deteriorating equipment as cold cash going out the door should make it much easier for you to make that first move. Put someone in charge of the program and pull no punches as to his responsibility to keep the program rolling. The payoff will come in less maintenance expense and far less frequent equipment replacements. ■

Looking over a carload of cylinders he has just leased in preparation for the coming winter is Florida LPG dealer John Bracco Jr. (right). With him is Ken Spaar, who is in charge of Bracco's bulk tank operations.

Dealer is ready for winter with two-way cylinder-leasing program

EDWARD G. DICKSON

THANKS to a two-way cylinder-leasing program he has just established, LPG dealer John Bracco Jr. is ready for the coming winter. Bracco, who operates Palm Gas Service Inc. in Ft. Lauderdale, Fla., believes the program—which any dealer can copy—will prove to be a potent means of extending his househeating load.

The two-way program works like this:

1. This year, when Bracco acquired his usual supply of a carload of cylinders for the firm's normal expansion, he leased them rather than buying them outright or financing an outright purchase. Thus, he became one of the first dealers in the country to utilize the plan for leasing cylinders "packages" inaugurated by LPG Leasing Corp., a subsidiary of Weatherhead Co. The ready-for-installation package consists of a pair of 100 lb cylinders with all necessary fittings.

2. Bracco, in turn, will lease these packages to customers under a merchandising program, which, he believes, will enable him to meet the growing competition for this highly-seasonal business. Leasing costs will thus be passed on to the customer and Bracco will be able to continue his expansion without greatly increasing his capital investment.

Cylinder leasing for househeating is a common practice in the mild southern Florida climate but has generally been used by smaller LPG dealers. The prospects to whom Bracco will direct his leasing program sales efforts will use LPG for househeating only, since, if they had other gas appliances, they would already have an LPG supply. Generally, they are newcomers to Florida who are under the impression it doesn't get cold in Florida, then buy a gas space heater when they find out it does.

"This package-leasing program came along at an ideal time for use," Bracco said. "We put out about 100 lease installations late last winter and had just decided to go more extensively into leasing to customers. When LPG Leasing Corp. announced this package program, we were debating whether to finance or to lease single cylinders."

Bracco cites several advantages to the package-leasing program offered by the Weatherhead subsidiary:

• The leasing cost is nominal. He figures it will cost him about $28 per package for the 10-year lease period and regards that as a small amount to pay to avoid a big capital investment.

• Payments on the lease program are made once a year. He'd "much prefer" to pay annually rather than monthly, as required by financing programs.

• There will be a tax advantage. Payments on the lease agreement can be considered operating expenses, whereas the outlay for purchased cylinders must be depreciated as a capital expense.

• It's a painless way to increase assets. Under the terms of the agreement with LPG Leasing Corp., the cylinders belong to Bracco in 10 years—if he chooses to exercise his option, or if he so chooses, he can buy them at any time during the life of the lease—at a preset price. In either case, he figures they will have a life of at least 30 years.

In selecting the package, Bracco chose 100 lb cylinders with a manual switchover. He prefers this setup to an automatic switch-over because he believes it will ease his operations. If the customer is aware that he no longer has a tank in reserve, he will be more likely to reorder promptly, thus eliminating some of the emergency calls.

With a supply of 251 packages now on hand, Palm Gas will begin its househeating advertising campaign in August, using newspapers and radio. The campaign will continue throughout the winter, covering the Ft. Lauderdale area, going up and down the Atlantic Coast several miles each way to include Pompano Beach to the north and Hollywood to the south.

Barring unexpected changes, Palm Gas will offer two filled 100-lb cylinders, completely installed, for $59.50. The customer must sign a contract that he will use or pay for 200 lb of gas during each succeeding 12 month period. The $59.50, however, includes the first years' minimum of 200 lb, as well as the indefinite lease of the equipment.

Spaar makes a trial assembly of one of the newly-leased package units.

Thus, thereafter the customer has nothing more to pay except for the LPG when a new cylinder of gas is ordered. That currently amounts to $11 per cylinder.

If the customer fails to use 200 lb of gas during the year's period, Palm Gas will bill him for the difference. The 100 installations put out last year have not run the full 12 months to provide actual leasing experience but, Bracco envisions no billing problems. Nearly all his customers use over 200 lb per year, the average running close to 300 lb.

Readers familiar with heating might wonder about such a light heating load. The weather bureau at Miami (25 miles to the south) lists only 185 degree days as a yearly average. Using the rule of thumb for the average house, .25 gal. per degree day, that multiplies out to only 46 gal., or very nearly 200 lb, for the year.

In his pricing structure, Bracco passes on to the consumer the cost of leasing the package. But he believes the leasing price is much more attractive than the outright purchase price, which is $90 for two cylinders or $49 for one cylinder. Both figures are for full tanks, installed.

"I studied this problem from many angles, and I concluded that I actually can net more by leasing to the customer than by selling the cylinder outright," Bracco said. "In addition, when we sell him under a leasing program, we have acquired a regular customer and need only to keep him happy with good service. No one else can fill his cylinders or exchange them when they are leased from us.

"We will continue to sell to customers who want to own their own cylinders. We pioneered in that service in this area. However, the prices in this type of selling have become so competitive that, while we make a profit on the cylinder itself, it is little more than the handling cost."

Bracco pointed out another advantage to the package leasing setup. Usually the person who wishes to buy, buys just one cylinder. When his gas runs out, it's an emergency and Palm Gas must make a delivery immediately. On the other hand, the package installation—for only $10.50 more—allows the customer the security of an emergency cylinder. It also allows the dealer more time to deliver the filled cylinder.

Thus, the more reserve cylinder customers Palm Gas acquires, the less strenuous will be the job of keeping them happy during cold weather. The problems of peak delivery demands, however, never deter Bracco.

"We knew that home heating is strictly seasonal before we ever went into it. It can also be the time when you make your money. It's a time when people use gas, and if you get it to them, they'll increase your profits. Our entire operation is set up on the basis that we will come out with a decent return in a mild year. In a cold year, we will make a handsome profit, simply through the increased volume of gas consumed."

Bracco has had considerable experience in build-

This 30,000 gal. storage tank proves ample for all Palm Gas needs, which include serving 2300 househeating customers.

ing home heating loads. Before he came to Fort Lauderdale in 1951, he had managed a mobile home specialties firm and a bottled gas operation. The latter had been developed from a small operation which serviced trailer parks to a substantial home-heating business.

At Fort Lauderdale, he followed a plan, beginning with a mobile home supplies store, then adding LPG service the following year by filling mobile home cylinders and later servicing trailer parks.

"From experience, I knew what the pattern would be, and was convinced there was a good market in househeating, which many of the companies were shunning in preference to business that was less seasonal."

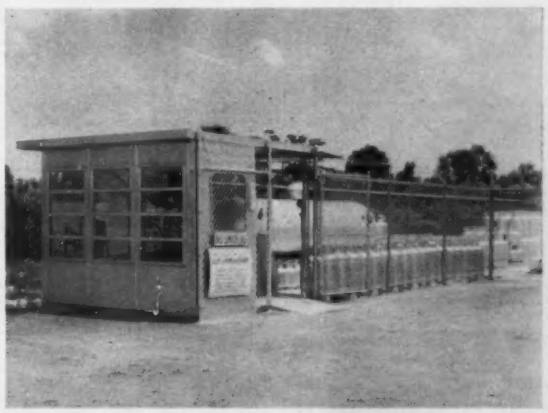
Palm Gas then sold cylinders outright. A lot of them were 20 lb cylinders for mobile homes, but more and more the trend was to 100 lb cylinders for househeating. Bracco used newspaper and radio advertising and found a ready response. The company's operations extended up and down the coast to cover an area with a maximum radius of 20 miles. This amounts to the entire inhabited portion of Broward County, since its central and western portions are largely swamp.

The company now has about 2300 househeating customers. Almost all own their own cylinders, but depend on Palm Gas to keep them full.

Despite Bracco's aggressive househeating campaign, servicing mobile homes with LPG still accounts for about one-half of his firm's income. He wants to maintain this ratio and ought to be able to, due to both the growth of trailer living in the area and the increased use of gas appliances in mobile homes.

Palm Gas maintains 30,000 gal. of bulk storage at its plant on the outskirts of Fort Lauderdale to service its customers. For the househeating load, it maintains three cylinder delivery trucks and usually rents an additional one during the peak season. Two servicemen make both househeating and trailer park calls. Completing the picture are a 1000-gal. bottle-filling station at the plant and one 500-gal. tank truck and one 1000-gal. tank truck that regularly call on trailer parks.

With 251 packages already on hand, Palm Gas expects to add around 500 new househeating customers during the coming winter. Many will purchase cylinders outright because there are always customers who prefer to remain independent. Bracco believes, however, that the package leasing program will help him to more effectively meet competition, to acquire more steady customers, and to still make a reasonable profit. ■



Primarily for mobile home customers, this bottle-filling station draws a steady year-round business.

"Our Ford F-1000's take the long grades with less down shifting!"

says L. W. Bullock, President
Butane Wholesale Gas Company, Little Rock, Arkansas

"Ford Super Duties have all the power and performance we could want. Our over-the-road transports haul 7,250 gallons of butane and propane for a gross combination weight of 59,000 pounds every trip. And with Ford tractors, our drivers can take the long grades in 7th gear of an 8-speed transmission—compared with 4th or 5th gear on other trucks we've used with 10-speed transmissions.

"Our four Fords with 477-cu. in. Super Duty V-8's have covered over 273,000 trouble-free miles, and the only maintenance we've done was to replace spark plugs and points. We never have to add any oil between our regular 5,000-mile changes.

"Experienced drivers say that these Fords are the best darn trucks they've ever driven, and they take care of them like they were their own. We have more Fords on order right now, and plan to have nothing but Ford F-1000 tractors for our bulk transport fleet within the next 18 months."

One day in five... GAS FREE!						
Sun.	Mon.	Tues.	Wed.	Thurs.	FREE DAY	Sat.
	1	2	3	4	5	6

'59 FORD PICKUPS GIVE 25.2% MORE MPG!

25.2% advantage delivered in Economy Showdown Tests means five days' driving on four days' gas

A leading automotive research group proved that a '59 Ford Six Pickup will run five days on the same amount of gas the average competitive '59 pickup burns in four days.

The tests were made on 1959 six-cylinder ½-ton pickups of the six leading makes purchased from dealers—just as you would. The trucks were tested in every kind of driving—high and low speeds, open highway and city streets, even simulated door-to-door delivery. And in every test '59 Ford Sixes delivered more miles per gallon than any other make.

Here are the actual percentages:

'59 FORD PICKUP SIXES GAVE

42.6% better mileage than make "D"
31.1% better mileage than make "I"
25.2% better mileage than make "C"
22.0% better mileage than make "S"
9.6% better mileage than make "G"

What's the secret of Ford's economy? First, of all pickup sixes, only Ford has modern Short Stroke design which reduces engine friction and thus requires less fuel. Second, to this modern engine, Ford has added a new economy carburetor to meter fuel more precisely in both high- and low-speed ranges.

Your Ford Dealer has the complete report of Economy Showdown U.S.A. See him right away and get the whole story firsthand.

All tests conducted and results
CERTIFIED
by America's foremost independent automotive research organization*
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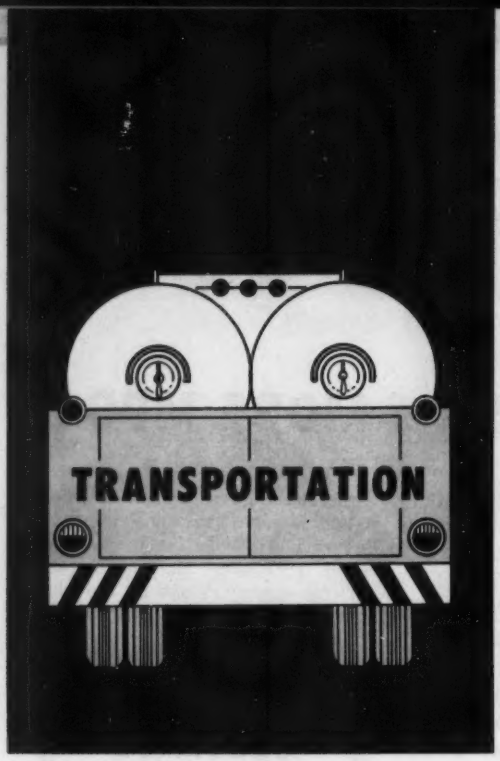
FORD TRUCKS COST LESS

LESS TO OWN . . . LESS TO RUN . . . LAST LONGER, TOO!



With LPG's biggest season just ahead, it's time to think again about getting the product to market. BPN's annual Transportation section covers both sides of the picture, transporting the product to the dealer and from the dealer to the customer. Separate stories offer basic help on, first, selecting a chassis, then, on deciding on what goes on it. A report brings you up to date on the hottest topic in trucks these days, the war on weight. Rounding out the section is a case history of a preventive maintenance program that enables a transport firm to use all its trucks around the clock when necessary.

Reviewing the basics of

truck selection and care

SINCE motor vehicles are principal tools of the liquefied petroleum gas industry, the proper selection and care of the truck fleet are vital economic factors to the LPG distributor and the dealer.

Picking the right truck for the job and observing the fundamental procedures for using and maintaining the unit can make money for the operator. But the wrong choice, abuse, and negligence can result in red ink in the form of short vehicular life, plus costly repairs and down-time.

The L. P. gas industry covers a broad scope of truck usage, ranging from large transports for long hauls to bobtails, flatbeds, and pickups for short runs. These operations cover a wide spread of gross vehicle weight requirements.

Selecting the right truck for the job requires an appreciation of the real meaning of gross vehicle weight "gvw." It is an elementary fact to most truckers that gvw equals the curb weight of a unit plus that of the body, the payload, and the driver. Nevertheless, how gvw is determined and its importance in truck operations are all too vague for many persons associated with the business. One expert has described it thus:

"The mysterious land of gvw is bounded on the north by truck specifications and selection, on the west by load-carrying ability, on the east by truck life, and on the south by truck warranty."

All are outlying territories affected by gross vehicle weight.

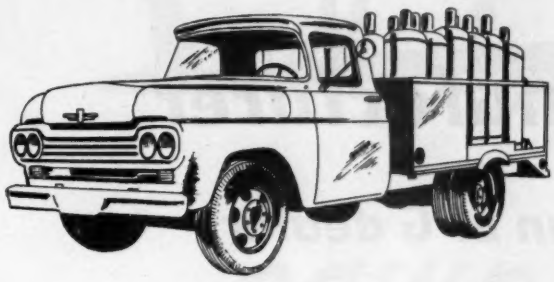
To solve the problem of gvw, the basis of truck selection, it is well to consider the standards and goals with which truck engineers work in determining the rating. The engineer believes standards in determining truck gvw ratings should take into consideration what is expected to be achieved in designing the trucks as well as what truck users demand from the units.

Provided a truck is handled and maintained correctly and is not consistently subjected to overload and undue abuse, it might reasonably be expected to

"The expense of down-time can soon eat up the initial saving resulting from buying a too-light truck."

give 100,000 miles of service before major assemblies are removed for complete overhaul. This would apply to such basic components as engine, frame, axles, springs, transmissions, etc. It should not be applied to expendables like spark plugs, brake linings, and tires.

In determining what might be expected of a truck in total miles, weight and speed are factors that must be considered. A change in one affects the other two. Therefore, the gvw assigned a specific vehicle might be expected to produce the maximum miles of operation at normal operating speeds on the highway.



Obviously, the same life expectancy formula cannot be applied to a truck in relatively light service as to one in a rough, off-highway job. Truck engineers recognize three distinct types of truck usage. They are:

1. General use—with either diminishing loads, or one way loaded and the other way empty. This includes most trucks sold today.
2. Highway use—ordinarily a tractor, both ways loaded, or a straight truck with load both ways. Either means long distances, high road speeds, and high engine rpm over long periods.
3. Off-highway use—traveling where there are no roads or the roads are unimproved, relatively rare but rugged applications.

The first two uses apply to the LPG industry, the third only infrequently. In all categories, top results depend upon two important factors—normal maintenance and normal care in operation.

Highway use involving higher road speeds is more demanding and the same mileage goal as for general usage should not be expected to apply. Long hauls and overloads take more out of a truck. A more realistic expectation might be 80 per cent of the general usage mileage. In the more rugged off-highway use, running in intermediate gears at high engine rpm an economic life expectancy as low as 60 or 50 or even 40 per cent of the general use mileage may result. If, for example, a 40 per cent overload is regularly demanded, a major component failure should cause no great surprise.

Greater mileage may be predicted with lighter loads, reduced engine strain and easier working conditions. However, these general standards are no positive guarantee to individual buyers because so much of truck life depends upon the way the truck is used, driven, and maintained.

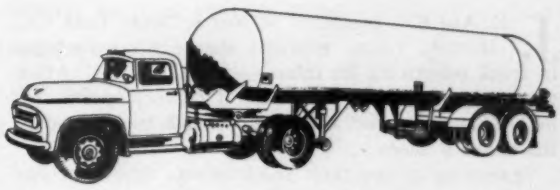
A good case in point is the door-to-door delivery operation. Although the load may be well below the rated capacity of the truck and speeds moderate to slow, this is one of the most grueling jobs for engine and drive line components. Constant starting and stopping are hard on clutches, brakes, and transmissions, and long periods of engine idling are more harmful to an engine than many more rugged hauling jobs.

Some truck users knowingly buy and operate trucks that will be continually overloaded, gambling that cost of repairs and down-time will not offset initial savings. Others buy trucks with the gvw rating to handle the job, being willing to pay the additional price as insurance against repairs and down-time. Experience has proved the latter is the better course in the long run, because the expense of down-time can soon eat up the initial saving resulting from buying too-light equipment.

Further insurance in fleet operations, in fact a necessity, is a consistent and systematic preventive maintenance program, "pm." Each truck manufacturer has a recommended pm program of specific inspection and adjustment procedures at regular intervals. Based on normal operating conditions, this program deals with fundamental requirements and should be modified according to the type of fleet operation.

Basically, these programs require at the end of each 1000 miles checks of: all operating instruments, brakes, lights, clutch pedal, paint, sheet metal, upholstery, transmission oil level and air cleaner, plus a complete lubrication and change of engine oil.

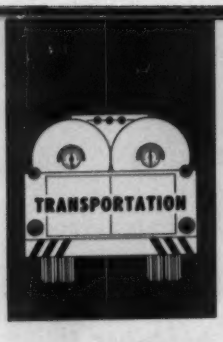
In addition to the routine 1000-mile checkup, addi-



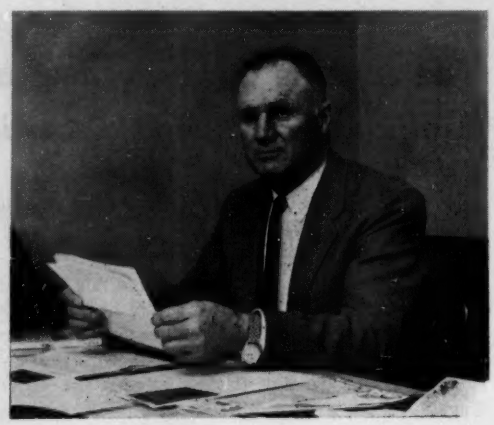
tional steps normally are recommended every 5000 miles. These include a complete engine tune-up, crosschanging of tires, and brake adjustment.

The 10,000-mile procedure, repeating the 1000- and 5000-mile routines, also requires adjustment and lubrication of front wheel bearings, along with a report on condition of front brake linings and drums and draining and refilling of transmission and rear axle.

Experience has proved in the examination of countless fleet records, that a few minutes of preventive maintenance can prevent a few hours of down-time. Start taking those few minutes regularly—beginning right now! ■



J. E. Allen began building tanks for his Allen Butane Gas Co. in 1946. Demands from other LPG dealers became so great that he organized North Texas Tank Co., now one of the nation's largest. The parent company, Allen Butane Gas, has proved to be an ideal laboratory for testing new ideas in trucks. In this article, Allen offers basic advice—backed by 20 years in the LPG business.



A tank manufacturer (who is a veteran LPG dealer) offers a few truck tips

KEN KIRKPATRICK

J. E. ALLEN, president of North Texas Tank Co., Denton, Texas, willingly shares his experience in truck selection with interested LPG dealers. After thoroughly discussing the dealer's delivery operations, he is able to suggest the type of truck best suited to the dealer's needs.

"Selecting a new tank truck affects future profits more than many LPG dealers realize," Allen says. "Many factors that affect operating costs and productive value of an LPG truck are overlooked by the dealer who simply buys another truck like the one he already has.

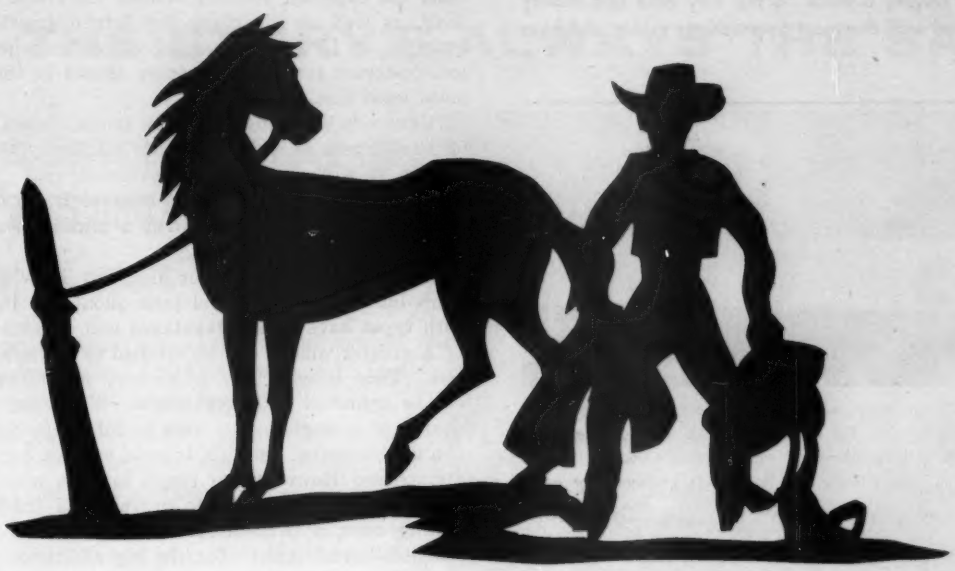
"Buying a particular size and type of tank truck should not be an arbitrary choice if a dealer wants the truck to earn maximum profits. The right size and type of truck will deliver LPG at a lower cost than a truck that doesn't fit the dealer's needs."

The many factors involved in getting the right truck for a specific operation are related to two main considerations, materials used in the unit and the proper size and type of tank, chassis, and delivery equipment.

Over the 15 to 20 years a truck can be expected to remain in service, the larger payload made possible by proper structural metals can greatly increase dealer profits. For example, Allen figures light materials save 3000 lb of dead weight in a 3000-gal. truck, making possible a 3000-lb larger payload. A larger payload (1) reduces time required to deliver a given volume of gas, (2) cuts fuel costs for deliveries, (3) lowers vehicle taxes, and (4) avoids the wear and tear caused by greater gross vehicle weight.

"Tank size and type, accessory equipment, and truck chassis depend upon operating conditions in the dealer's territory," says Allen. "Traffic congestion is one important factor. Heavy traffic slows truck runs. Excessive return trips to refill a tank truck are especially costly. Under such conditions, the dealer should select the largest truck that can handle deliveries properly."

Road conditions also affect tank size. Small trucks are often necessary for rural deliveries because of weak bridges and unpaved roads that would be dangerous for larger trucks.



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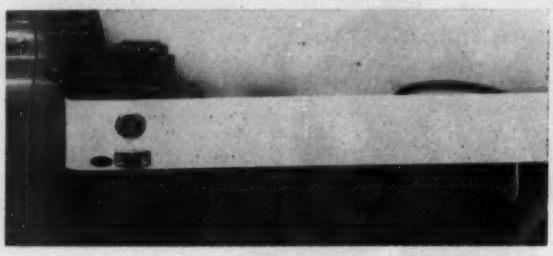
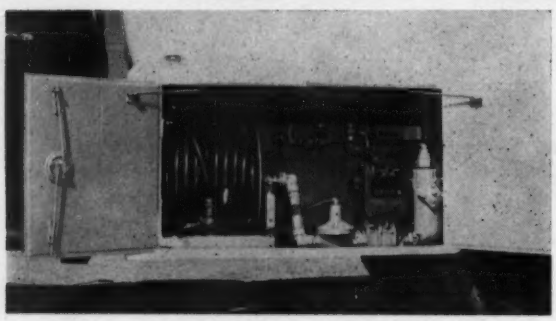
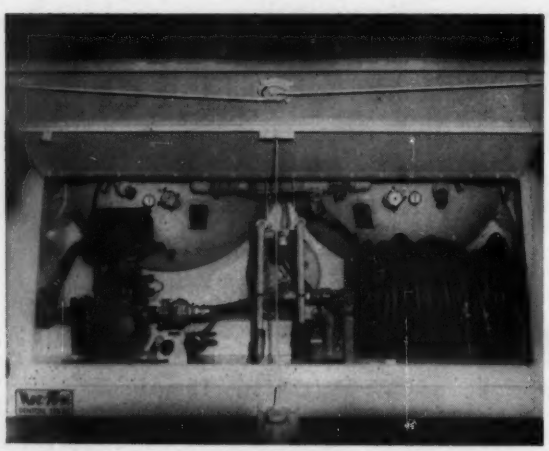
"A good illustration of how the little factors can mean a lot when buying a truck" is the way time and money can be saved with the most appropriate meter and hose installation.



Simplest and most inexpensive is the exposed installation with the hose simply lying on the shelf in the skirt. It offers maximum operating ease and speed where weather conditions are not a serious problem. This driver's side location is preferred for rural deliveries.



More elaborate, more expensive, and more time-consuming-in-use, but definitely better looking and an absolute must for bad weather conditions is this fully enclosed installation. For normal city use, it would be on the curb side of the truck.



This fully-enclosed, rear-mounted installation is intended for all-weather use where deliveries will be made on both sides of the truck. The door lifting to reveal this neat, impressive display of equipment might also be the door opening to a long sales relationship with a new customer.

In determining tank size, a dealer should also consider the expected monthly volume the truck will deliver, as well as his plans for future growth. For example, an LPG truck making deliveries where 500-gal. customer tanks are common, should be the maximum legal size.

"Generally speaking, the tank truck chosen should be the largest that will operate efficiently over the terrain it will cover," Allen summed up. "Proper sizing is extremely important because it permits delivering maximum volume with a minimum number of trucks."

Another important factor decision is whether a single-barrel or twin-barrel tank should be installed. Both types have their advantages and disadvantages.

"A greater volume can be handled by a single-barrel tank. This is especially important when the truck will be operated in heavy traffic. While the weight balance of a single-barrel tank is not as good as that of a double-barrel truck, it is good enough for use on city streets. However, for rough terrain, where good vehicle balance is needed to prevent the truck from turning over, a twin-barrel is better."

Double-barrel tanks offer the big additional advantage of carrying both butane and propane at the same time. This is important when both must be delivered to nearby locations, often saves a return trip. This is also a major factor to consider when deliveries are made in a rural area where roads are poor and it takes considerable time to get to the customer. The biggest disadvantage of twin-barrel tanks is, of course, that they require more chassis for a given load.

"The location of delivery hose and meter may seem unimportant, but placing them properly for delivery conditions to be encountered saves the driver's time, and increases his daily volume," Allen stressed

Delivery equipment can be placed on either side or at the rear of the truck. In areas where trucks usually service tanks located underground or at the curb, delivery equipment should be on the curb side of the truck.

When a truck makes city deliveries on both the curb and driver's side, the rear location for the delivery equipment is best. This is also true when the driver uses city alleys, working both sides.

Delivery equipment should be on the driver's side for rural deliveries. This more convenient location provides faster operation.

"Another factor to be considered," Allen added, "is whether the meter and hose should be in the open or enclosed."

Where weather is normally severe, enclosing meter and hose equipment offers needed protection from rain, ice, and snow. Where such protection is seldom necessary, delivery equipment can be in the open so the driver can get at it easily and quickly. Open installations, when practical, save time otherwise wasted in opening and closing doors and unwinding and rewinding hose.

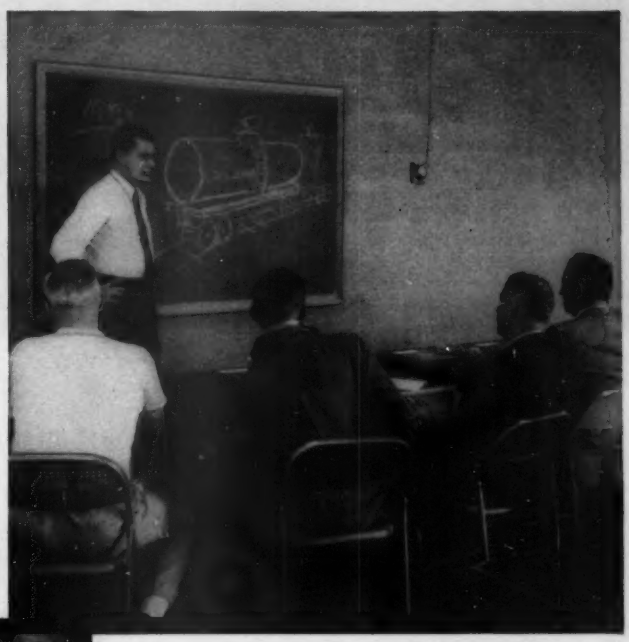
"This can amount to many hours—and dollars—over a month's deliveries," Allen concluded. "A good illustration of how the little factors can mean a lot when buying trucks." ■

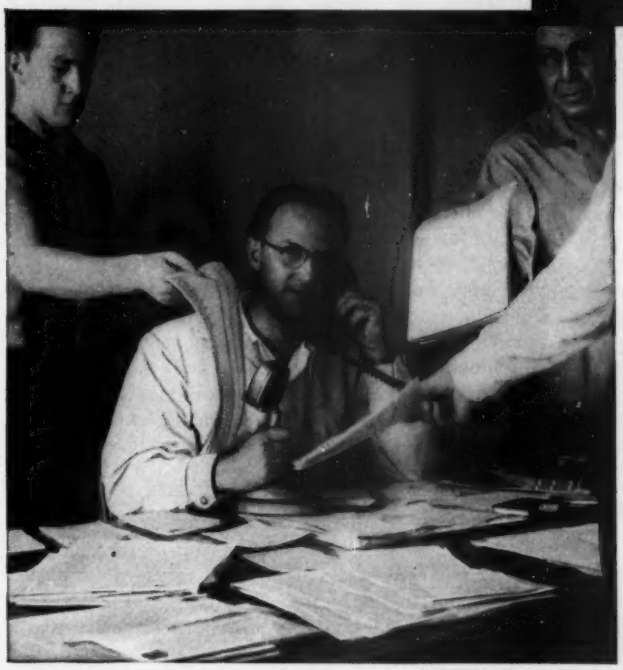
EAST, WEST, NORTH OR SOUTH— THE STORY'S ALWAYS THE SAME

"Cities Service has helped me build a $5,000,000 volume in just 10 years"

Thermogas Company has expected and received the full cooperation of Cities Service since the start of the company in 1948. Inventory control . . . warehousing . . . bookkeeping . . . sales training and education are all areas in which Thermogas has looked to Cities Service for experience and guidance.

Right now, this distributor is in the midst of spending $80,000 per year to conduct intensive courses for employees and customers in virtually every phase of LPG operation. Expert Cities Service instructors are used for many classes.





"I was in a jam but Cities Service pulled me out"

December 1, 1956, Loyd Hittle took over an LPG Distributorship. "On top of all the normal confusion, I found the storage tanks completely dry and customers clamoring for delivery." Hittle made a call to Cities Service and next morning he had his propane plus the assistance of a Cities Service technical representative.

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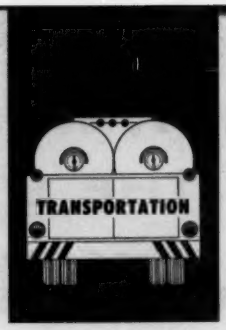

Typical of light weight transports now turned out is this unit, delivered in June to a western LPG operator. Built by Lubbock Machine & Supply Co., it has 11,000-wg-plus capacity, is designed to haul 41,700 lb payload in a state where the gross weight limit is 76,800 lb, using a 14,000 lb. tractor.

Transport, bobtail manufacturers continue

War on Weight

"WHAT'S all this about T-1 steel?" asked BUTANE-PROPANE *News* a year ago (September, 1958, pp. 28-30). In a survey of manufacturers, we found out what T-1 steel was, how much weight could be saved by using it in transports and bobtails, what extra capital costs were involved, and what it meant to the average LPG operator.

The use of T-1 in the barrel, of course, is only one means of saving weight. Manufacturers, in conjunction with the more experimentally minded of their customers, have long been working on all aspects of the problem. What progress, we wondered, are they making?

So we asked them, and as a sequel to last year's T-1 story, we present here some up-to-date facts on the continuing war on weight.

Q. First off, what percentage of current production is in T-1 tanks?

A. This varies greatly among manufacturers, but at least some of them are building all transports with T-1. One is Mississippi Tank Co., which builds transports in 7000-to-10,500 wg capacities. J. B. Beaird is another, dividing production about 50-50 between 7500-to-8000-gal. models for mounting on single axle tractors and 9000-to-11,000-gal. tandem tractor models.

Another firm that turns out only T-1 transports is Pressed Steel Tank Co. Most of its production, an estimated 70 per cent, is in the 8600-gal. size. The remaining 30 per cent is equally divided among 8300-gal., 9000-gal. and 10,000-gal. sizes.

North Texas Tank is building 99 per cent of its over-7500-wg models with T-1 steel, and 85 per cent of its smaller transports.

Among bulk delivery trucks, T-1 is used in 98 per cent of the 2800-wg-plus models and 20 per cent of the 2500-2800-wg models, but only 5 per cent of all smaller models. Even this small percentage in the under-2500-gal. category is rather significant. A year ago, we reported that the lower range of T-1 bobtails was around 3000 wg, because of the economics involved. Obviously, some dealers are now convinced that the 16-to-17 per cent weight saving has advantages even in the small models. It's the old story of capital costs vs operating expenses, and the former seems to be getting less important all the time.

Not all companies approach these production records. Trinity Steel Co., for example, makes only 23 per cent of its 3000-gal., 46 per cent of its 7500-gal., and 31 per cent of its 10,000-gal. carriers from T-1. This is not to imply that Trinity is not itself sold on T-1. Nothing could be farther from the truth, for Trinity was one of the leaders in the trend. But the customer is still king, and if he doesn't specify it, it won't be used.

Q. In what other ways can weight be saved on fuel-carrying vehicles?

A. Skirting is one way. Nor-Tex uses both aluminum skirts and cabinets, which together save up to 1000 lb on bobtail delivery units. Mississippi Tank standardized on aluminum skirting, figures the sav-

How JOHN DEERE helps bring LP-Gas to the Farm

First "Full-Line" Crop Dryers Promote *Push-Button Sunshine*

When you encourage crop drying, you take a big step toward balancing your distribution load and introducing LPG for other farm uses. Now, John Deere Crop Dryers, along with tractors, combines, cotton pickers, and irrigation engines, are introducing more and more farmers to the convenience and efficiency of this modern fuel. Here are some reasons why you can recommend them:

Every farmer wants to "make hay while the sun shines." The same principle applies to most other crops. Early, high-moisture harvest plus artificial drying pays, in normal as well as wet years. It takes away risk, loss, and discomfort; adds security, convenience, and profit.

Drying makes sense, when you're sure. And the new John Deere Crop Dryers, first to be made and backed by any full-line farm implement company, provide that assurance. They set a standard of safer, easier, more dependable operation that many have waited for.

The batch-type 458 Grain Dryer, for example, features a unique blending system and unmatched fan performance for fast, uniform drying . . . full thermostatic control . . . electronic flame safeguard system . . . indicator-light panel . . . top-quality "plumbing" . . . low power requirement.

The 88 Portable Crop Dryer, a versatile heat unit for drying ear corn, hay, peanuts, or grain in wagons or suitable structures, has the same fan, burner, and controls—plus three spark-arrester screens.

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All aluminum cabinets and skirting helped reduce weight on this Mississippi Tank 2600-wg unit to 23,000 lb at 85 per cent load.

Aluminum bumpers and aluminum fenderettes combine with T-1 steel tank to reduce tare on this 8200-wg Mississippi Tank transport.

ing at 60 per cent, the increased cost at 30 per cent. Trinity Steel has not used aluminum skirts, feeling that the additional stiffeners required offset the weight savings of the material. However, this company reports it is building more and more units with smaller skirting. Many customers are specifying the complete elimination of this item.

Q. Can weight be saved on fenders?

A. Aluminum fenderettes are becoming more popular. They are standard with Mississippi Tank on large bobtails and are also used on transports. Trinity has equipped some tank trucks with them, but "only where great strength is not required."

There is some controversy over plastic fenders. Some manufacturers claim they are brittle, and crack too easily. Others have supplied them on request. Some are still undecided, but are field testing them for durability.

We recently encountered one company—Griffith Transportation Co., in Carmi, Ill. (see story on page 58) which has had excellent results with plastic and intends to order more fenders of this material. One minor accident put only a short crack in the plastic, whereas it might have badly dented or ripped a steel fender. It was easily and quickly patched. And the beauty of it, according to Griffith, was that the repair could be made on the truck without hazard.

Q. What other aluminum components are being used?

A. Aluminum bumpers, for one. Several manufacturers are installing these where specified. Nor-Tex is also using aluminum baffles of a "Venetian blind" design to save up to 400 lb.

Q. What about light-weight wheels?

A. All respondents stated that the lightest-weight wheel "commensurate with safety" (in the words of one) were being used.

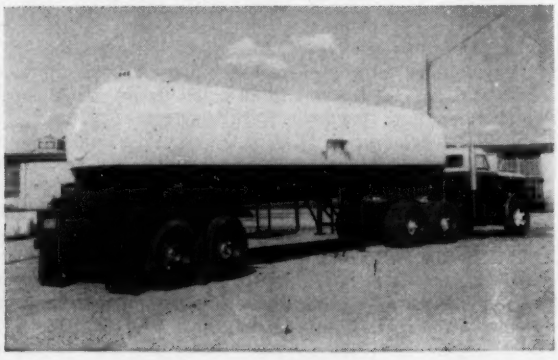
Griffith reported that a new 3-spoke wheel is now available which has T-shaped spokes and two lugs each at the hub.

Q. Tank baffles seem to offer possibilities for weight reduction. What can be done here?

A. Light-weight, high tensile strength steel bulkheads seem to be the most popular solution to baffle weight. As noted above, Nor-Tex uses aluminum. The next step seems to be reduction in the size of baffles. Several manufacturers have done this. Some have carved holes in them without destroying their

This 10,200-wg transport, built by Beaird, has an empty weight of 20,130. In addition to T-1 steel barrel, it is fitted with half-baffles; tubeless tires; 5-spoke Dayton high-tensile wheels; Binkley landing gear with aluminum dolly wheels; aluminum cabinet, fenders, and hose tubes; and a Neway RTS-500 suspension.

This 10,425-wg unit has features almost identical with those of the other Beaird unit, except for the Hendrickson RSAA-320 rubber-mounted suspension with aluminum walking beam, which also saves same weight as Neway unit (100 lb) by reducing subframe requirements. Empty weight of the vehicle is 21,243.



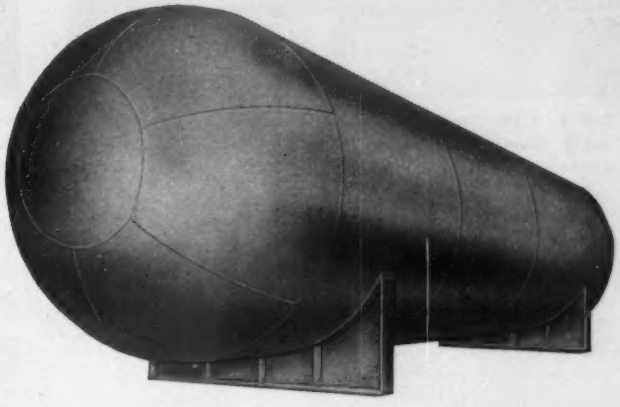
...for a better Contract

CHECK

It takes year around buying for those extra profits on your winter gas sales. Take stock of your needs . . . then call Master for prices and delivery on storage tanks and transports. We're building them and selling them from Quincy and Dallas. Write, telephone or wire the nearest Master Plant.

✓ STORAGE

Break the bonds of limited storage capacity with Master LPG Storage Vessels. We build to your specifications in ANY size. Full X-rayed seams assure absolute safety. Meets all code requirements. Send for Master Storage Folder.



✓ TRANSPORTS

Dealers' choice . . . MASTER transports of miracle light-weight T-1 Steel for BONUS payloads. Engineered and built to meet your specifications up through 10,000 water gallons. Fabricated to meet the latest codes. Fully X-rayed and sand blasted. Recessed fittings. Simplified plumbing system. Send for Master Transport Folder.

✓ DELIVERY TRUCKS

The "Time Saver" is a money saver for LPG operators—featuring a hose reel located in a side cabinet for simplified sidewalk delivery. The fire extinguisher is mounted in a recessed cabinet on the left side of the truck. Two cabinets at the rear carry extra fittings and valves. All fittings are recessed; all seams are 100% X-rayed. Available in capacities up to 2400 water gallons.

MASTERPIECES OF STEEL FABRICATION

MASTER ®
ANOTHER MASTER PRODUCT
TANK & WELDING

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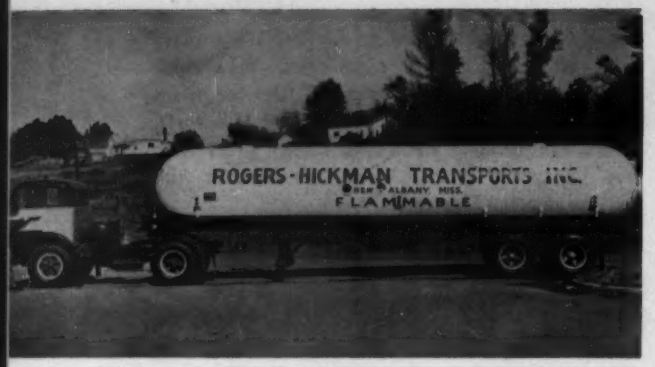
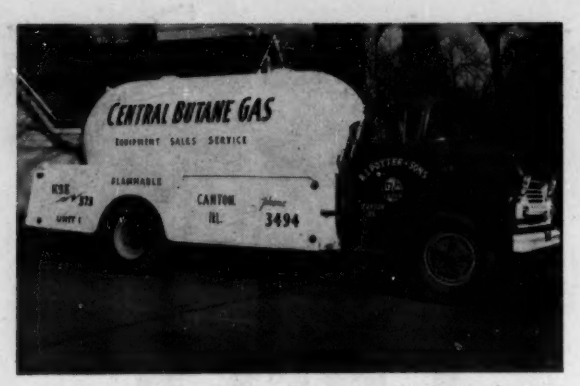


Built by North Texas Tank, this 8250-wg unit weighs 27,700 lb empty. Loaded with propane to 85 per cent of capacity, the weight goes up to 57,400 lb.



North Texas Tank Co. saved 700 lb on this bobtail with aluminum skirting and cabinets. The 2800-wg unit weighs 13,800 lb empty, 23,940 lb with 85 per cent load.

ability to break up surge. Others have eliminated baffles entirely, if so specified. But this is a somewhat controversial measure. Some don't believe it's wise; others do. Transporters have also expressed differences of opinion. Where full-capacity drops are made, and trucks are never driven with partial loads, surge is almost completely eliminated, say some. Therefore, they see no reason for them. One manufacturer stated that it has been proven that load surge "is not actually dangerous," but its psychological effect on drivers has led many dealers to return to using baffles. A saving of 500 lb or so in a large truck would be well worth study if there is no danger involved.

Q. Where else might weight be saved?

A. Here are a few items for consideration: tubeless tires, elimination of the spare tire and tire carrier; elimination of the front brakes on tandem tractors; redesign of transport sub-frames using light-weight, high-tensile strength steel; re-engineering of adjustable transport rub plates; replacement of adjustable rub plates with fixed ones; and elimination of all non-essential structural materials.

Plastic fenderettes can contribute measurably to increasing the payload says Cranston Stiff of Griffith Transportation Co. Griffith is now starting to use them on all its trucks. They are easy to patch, too, according to Stiff, who is shown here inspecting a quick repair job on one of them.

Q. By incorporating all these reducing features, how much aggregate weight could be saved?

A. Beaird has come up with item-by-item figures, which are presented here:

Weight Differentials

Item	Standard	Weight (lb)	Alternate	Weight (lb)	Savings (lb)
Fenders	Steel	536	Aluminum	210	326
			Fiber glass	130	406
			Plastic (contour)	90	446
Baffles	84-in. ID	536	Half-baffle	275	261
			No baffles	0	536
Wheels	20 x 7.50 V-10 10-hole Budd dual	158	Dayton 5- spoke cast	50	108

Supplementary savings

Elimination of spare tire and carrier	265 lb
Fixed rub plate (vs adjustable)	250 lb
Aluminum bumper (vs steel)	25 lb
Eliminate front brakes on tandem tractors	240 lb

All this adds up to a lot of potential weight savings, which are readily convertible into increased earnings. Some manufacturers figure you can earn up to $1 per year for every pound saved. That's worth giving a lot of thought!

The industry has come a long way in the past few years in weight reduction, but manufacturers are not complacent. They feel that a great deal more can be done. In the words of Dillard R. Cantrell, chief engineer for Trinity Steel, "we are still not satisfied . . . and continued research and redesign is being practiced at Trinity to build a better product, a stronger and a lighter product at no additional cost to our customers."

To which, we imagine, a number of others would add their warmest "amens." ■

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No question about it, Texaco LP-Gas Distributors have a big edge because they are assured of on-time, dependable deliveries. Texaco is one of the largest producers of LP-Gas and has a new fleet of tank cars for fast delivery.

If you are looking for a solid future, consider this fact: 683 distributors of Texaco products have been with us for 20 years or more – many others for as long as 45 years. These men have found it *pays* to be on the Texaco team of successful Distributors.

5 reasons why it pays to be a Texaco LP-Gas Distributor

1. A product of highest quality—moisture-free.
2. Dependable and efficient delivery, in a new fleet of tank cars, from 31 strategically located production areas.
3. Immediate acceptance. Texaco LP-Gas is sold under the nationally famous trade-mark, the Texaco red Star with the green "T."
4. One of the largest producers of LP-Gas, Texaco is the only petroleum company to build up successful distribution of its products nation-wide.
5. Profitable and proved sales policies. Texaco does not compete with its independent distributors of LP-Gas.

Team your name with Texaco and profit. Let us tell you about the opportunities for a sound and profitable business with Texaco LP-Gas. Call or write today . . . Texaco Inc., LPG Sales Division, P. O. Box 2420, Philtower Bldg., Tulsa, Okla., DIamond 3-4101; 3350 Wilshire Blvd., Los Angeles 5, Cal., DUnkirk 5-0515.

TEXACO LP GAS

TRANSPORTATION

These four transports, together with five sister ships, supply LPG to 56 bulk plants in three states. To keep the Griffith customers supplied, they must be kept rolling nearly every day in the year. This remarkable performance is possible only because of a rigid preventive maintenance program.

Preventive Maintenance

keeps fleet rolling around the clock

KEEPING a full fleet of transports rolling around the clock (and the calendar) can be a tough assignment, especially when you're located in a town some 40 miles from the nearest big city.

But Griffith Transportation, Carmi, Ill., does it. The reasons? First, a sound preventive maintenance program. Second, a full-time crew of mechanics. Third, a well-stocked parts department. Fourth, a 100 per cent LPG-powered fleet. And fifth, a steady lineup of drivers, each of whom is almost always assigned to the same tractor throughout its lifetime.

Carmi is a moderate-sized town with a thriving business district and many nice homes. The nearest major city, Evansville, Ind., is some 40 miles away—as is the International Harvester distributorship, which has the only International shop in the general area equipped to do major engine overhauls. Yet Carmi is otherwise an ideal location for the tri-state transport business carried on by Griffith in southern Illinois, Indiana, and Kentucky.

So at Griffith, a shop manned by skilled mechanics is a must. So, too, is a well-organized preventive maintenance program.

Griffith Transportation, owned and operated by Jack Griffith, one of the sharpest and most experienced operators in the business, has a compact fleet of nine transports supplying LPG to 56 plants in the three states. The company has no storage of its own, the transports delivering direct from refineries at Tuscola, East St. Louis, Crossville, and McLeansboro, all in Illinois. Two units are 10,000-wg T-1 tandems; the rest are 9240's and 7800's. All together, these trucks haul between 18 and 20 million gal. per year. Individually, as an average, they would thus carry more than 2 million gal.

That's a large order for any transport. And it's made a little tougher by low weight limits, particularly in Kentucky. Illinois has a limit of 59,000-lb (68,000 for tandems); Indiana has a 61,000-lb limit, with 72,000 on tandems; Kentucky has a top weight of 58,000 for both classifications. So on the 10,000's and 9200's, Griffith cannot fill to the safe limits. On the 10,000's, gallonage is held 9 per cent below the customary levels and on the 9200's, 7 per cent under the usual levels.

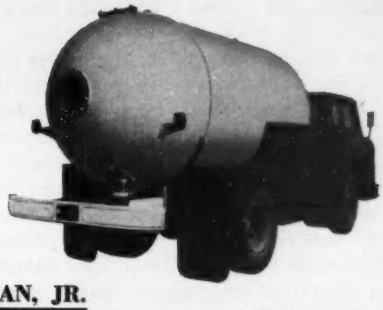
Average load, then, would be well under 8000 gal. But using that figure as a convenient number, you'd find that to carry 2 million gal., a truck would have to make 250 trips per year to the refinery, thence to the customer, then back to the Carmi garage. A trip every working day in a five-day week, in other words—with no allowance for time out of service.

Of course, it's not steady. Griffith has peaks like everyone else. For example, in January 1958, the fleet traveled an aggregate of 2524 miles per day (average 280 miles per truck) on a seven-day-per-week, 24-hour basis. Total gallonage hauled per day, average, was 85,188; the per-truck average, then, was 9465 gal., or more than one load per day.

Make More Money With Mississippi Tank

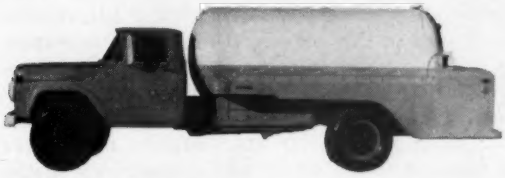
Profit-Designed DELIVERY UNITS

Whatever your LP Gas delivery requirements may be, Mississippi Tank Company has a unit engineered to do the job efficiently and fast. Payload capacity, economy of operation and durability have been skillfully combined in each unit. Whether you make long or short hauls on highways or back roads, there's a Mississippi Tank delivery unit to give you years of high-profit, low-cost service.



TITAN, JR.

2600 water gallon capacity—*weighs less than 23,000 lbs. loaded!* The secret is exclusive Mississippi Tank design which insures perfect weight distribution and maximum loading. A 202-B steel construction, 72" inside diameter tank, fully X-rayed and sand blasted.



PAYMASTER TWIN

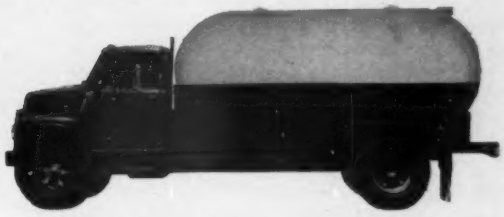
Streamlined and beautiful, the Paymaster is engineered to give low cost service on back roads or highways. Many low-cost options for high-profit operation. Available in 1200 to 2300 water gallon capacities.

All Mississippi Tank Delivery Units are fabricated according to latest ASME Code, and ICC Specifications.

MISSISSIPPI TANK COMPANY
INCORPORATED
Hattiesburg, Miss. JUniper 3-0262

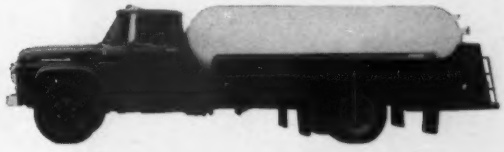
T-1 TITAN

Its extra capacity—3075 water gallons on a single 18,000-lb axle, enables the Titan to pay for itself in a matter of months. Lightweight T-1 steel construction, 76½" inside diameter, tank fully X-rayed and sand blasted.



ATLAS SINGLE BARREL DELIVERY

Quality designed and precisely balanced for maximum payload capacity at low cost. Finished with many deluxe features you'd expect to find only in higher-priced models. Capacities: 1500 to 2300 water gallons.



Mail coupon for literature on the latest in profit-designed equipment

MISSISSIPPI TANK COMPANY, INC.
Hattiesburg, Miss.

Please send literature on
——Single and Twin Barrel Delivery Units
——T-1 Steel Transports
——Domestic and Bulk Storage Tanks

NAME .....

COMPANY .....

ADDRESS .....

CITY and STATE .....

Located 40 miles from the nearest large city, Griffith Transportation must make all its own inspections and do all its own repair work. This is a full-time job for Shop Foreman Kenneth Murphy (foreground) and Howard Saunders, shown here in the new (not quite completed) Griffith shop.

At the end of a shift, Driver Harry Clark checks in with Mechanic Howard Saunders. Each driver is obligated to make a daily inspection and file a report with the shop. The mechanic then makes his own report of findings on any items needing attention.

The radius covered by the Griffith trucks is approximately 140 miles. The East St. Louis and Tuscola refineries are 150 or more miles from Carmi headquarters. So more than one load per day keeps the trucks humming all the time.

This kind of schedule is rougher on the trucks than on the men. In the winter, Griffith goes on a seven-day schedule, around the clock.

In summer, service is cut to 5 days and 1½ shifts.

Such a rigorous routine leaves no room for rubber-tired invalids. Every truck must be kept in top shape the year around. Troubles must be anticipated and averted before they become evident. A single truck, laid up for a week or two in the winter, could clobber the tight Griffith schedules.

So the company has a well planned repair facility, a skilled and responsible crew of four (two mechanics and two helpers), and a stock room that's always kept up to quota on spare parts.

At the end of each day's work, the driver of each vehicle is required to submit a "Driver's Vehicle Condition Report," a single-sheet form (illustrated) on the face of which is listed the truck identity, the time, date, place, and speedometer reading, and hours and miles in use. Below this is a comprehensive check list covering fuel, water, oil supply; condition of brake lines and electric lines to trailers, drive line, coupling devices, springs, etc.; emergency equipment; fuel system, cooling system, engine, leaks, lights, and reflectors; and more than a dozen other items. These are categorized by circumstances of inspection—that is, "before starting engine, after starting engine—out of cab," etc.

A column is provided for the driver to insert appropriate check marks. When repairs or adjustments are indicated in this column, the mechanic is responsible to take corrective action and note it in the appropriate space in an adjoining column.

On the reverse side is a supplementary check list and a listing of items for which expense might have been incurred if the driver had a breakdown on the road.

This report, together with preceding and succeeding reports, gives a running diary of the vehicle. After completion, each is retained in a vehicle file for 30 days as a guide to other inspections.

Once each week, every vehicle is pulled off the road for a single shift, and is given a complete servicing, which includes lubrication, oil change, and wash job, minute tire inspection (and replacement where needed), a filter change, and (in cold weather) an anti-freeze checkup.

At the same time, the truck is gone over from top to tread, with all the daily check points rechecked. Any weak points are immediately rectified to forestall breakdowns.

Incidentally, this policy of withholding a tractor for at least one shift increases the load on each of the other tractors proportionately, so the average cited earlier should be increased accordingly.

The aim of the stock room is to have on hand sufficient supplies of every part that might be needed for any work that can be done in the company's own shop. Among the items that are carried as standard spares

Sell the Beauty* of Warm Morning

* **Beauty of Convenience**
New TOP-O-MATIC controls

* **Beauty That Lasts**
20 year guarantee on heat chamber. Lifetime guarantee on burner.

* **Beauty of Comfort**
"Jet-Stream Heat Flow At Floor Level"

Beauty, Quality, and Performance That Mean Easier Sales and Greater Profits.

America's Most Beautiful Gas Heaters!

Warm Morning® GAS HEATERS

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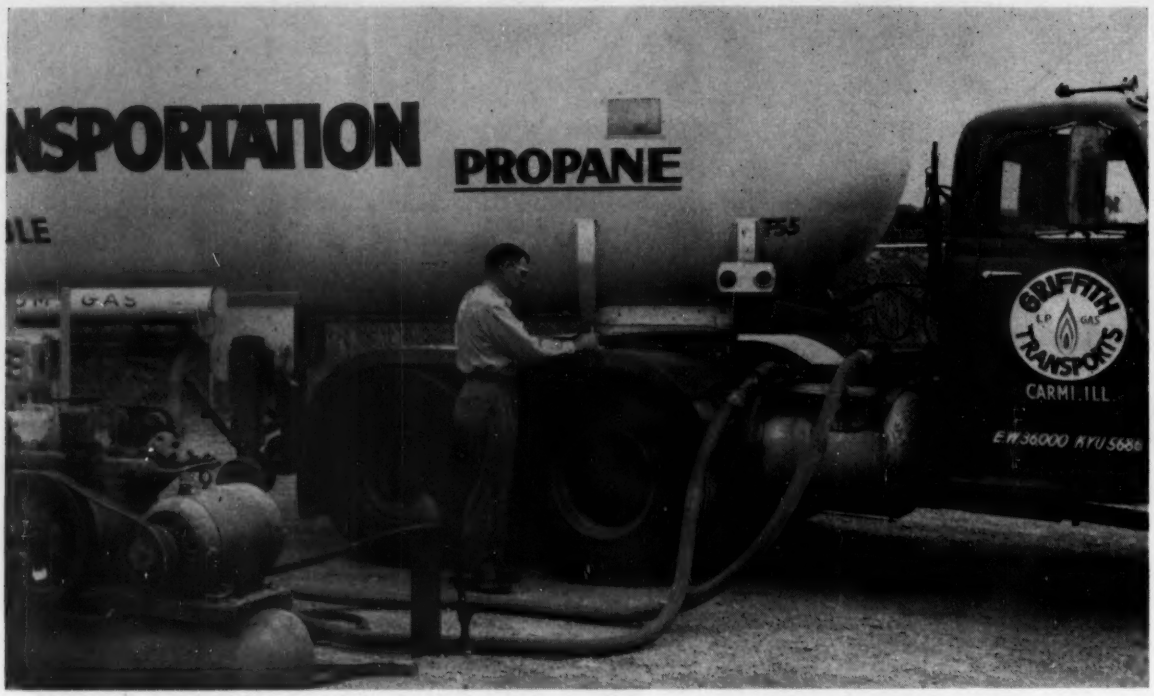
MANUFACTURER OF WARM MORNING HEATERS AND INCINERATORS AND MOORE'S GAS HEATERS.



Harry Staley makes a delivery to a Griffith customer's plant. This truck, together with the eight others in the fleet, deliver a total of almost 20 million gal. per year. In the heavy month, they travel as much as 280 miles per day.

are filters, plugs, tires, clutches, exhaust manifolds, pipes, and fittings; complete propane carburetion repair parts; distributors, power steering hose and gaskets.

Griffith considers an adequate stock of parts one of the most important elements in its preventive maintenance program. Lack of inventory, says Manager Cranston Stiff, is potentially one of the most expensive aspects of any preventive maintenance program. To assure themselves that they never run out of parts, the shop men use a "want-card" system. Whenever a part is removed from a vehicle, a tag is made out with a description of the part, and this is hung on a spindle. Periodic checking of the spindle gives all the control that is needed.

The garage is equipped to do virtually everything but rebuild an engine. It has its own welding equipment. It rebuilds vaporizers for the propane carburetor system. It has its own body shop, wash rack, and paint department.

Engines are rebuilt periodically by International Harvester. At 200,000 miles, the signal goes out to watch performance extra carefully with an eye to replacement. Presently, one tractor engine has nearly 300,000 miles on it, but it will be removed momentarily. On hand at all times is at least one rebuilt spare engine. Full complement is two.

All engine replacements are performed right in Griffith's own shop.

What does all this care cost? Stiff has not costed out the preventive maintenance and repair work separately, but the total vehicle expenses average out at 28.7 cents per mile. This includes fuel, license fees, taxes, tires, oil, grease, parts, repainting, relettering (done once each year), labor costs for the driver, and proportionate labor costs for the shop crew. Not included are office overhead or other costs of doing business.

Griffith is studying other means of cutting this figure even further. More frequent rotation than is now used would probably cut tire costs, Stiff thinks. Most trailer tires are now good for about 80,000 miles. Recapping adds another 40,000 miles or so. And about 70 per cent of the tires can be capped a second time.

Having a fleet that is fully propane-powered obviously saves money both in fuel and maintenance costs. How much? Since Griffith has never used anything but LPG carburetion in his transports, he is not able to make any valid comparisons.

The fifth and final factor in keeping breakdowns at a minimum and maintenance costs low is a steady crew of drivers, with each assigned to a single tractor. A lucky circumstance makes this possible. Griffith maintains only a summer-size crew of 7 men as a steady work force the year around. In the busy season, he adds extras as he needs them, up to a total of 16 drivers. But these men are not casual employees; they return to work each year, with a minimum turnover; most of them own and operate their own farms. Their own work slackens off during the cold months, and they are happy to have a well-paying fill-in job they can depend upon.

These part-time men are also available for substitute work, as well. Just before the harvest, the farm demands slacken again, so they are free for short

a bag full of SERVICE

LPG Service for you...

Our bag of LPG service tricks runs all the way from the producing well to shirt-sleeve sessions with you and your problems. Anchor has built an organization of the finest facilities and the best LPG brains just in order to provide you with gas of the finest quality and kind when you need it. You can take full advantage with a year-round contract. Call us about it . . . Tulsa CHerry 2-7261.

ANCHOR

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DRIVER'S VEHICLE CONDITION REPORT

NAME OF MOTOR CARRIER_____

COMPANY: ADDRESS:

VEHICLE	CAR		TRUCK	TRACTOR	TRAILER
MAKE					
NUMBER					

TIME	DATE	PLACE	SPEEDOMETER READING
	HOURS	MILES	

REPORT AFTER TRIP	Driver's Report*	Mechanic's Report*
Mileage reading on speedometer (insert)		
Before starting engine:		
Oil, if added, insert no. of quarts		
Water		
Gasoline, if added, insert no. of gallons		
Brake lines to trailers		
Electric lines to trailers		
Drive line		
Coupling devices		
Tires and wheels		
Springs		
Body and load		
Glass		
Emergency equipment:		
Torches, lanterns, or reflectors		
Fuses		
Flags		
Spare bulbs		
Fuses		
First-aid kit (buses)		
Axe(buses)		
After starting engine (out of cab):		
Fuel system		
Cooling system		
Engine		
Leaks		
Lights:		
Head		
Tail		
Stop		
Clearance and marker		
Reflectors		
After starting engine (in cab):		
Oil pressure		
Ammeter		
Horn		
Windshield wipers		
Parking brakes		
Clutch		
Transmission		
Rear vision mirrors		
Steering		
Service brakes		
Speedometer		
Other items requiring attention		

Drivers Name.....

* Drivers should (✓) items which are satisfactory and (X) items which are not, and explain defects next to the X or if there is insufficient room, at bottom of the form. Items which are marked (X) by the driver must show a (✓) with mechanic's initials indicating correction before continuance of operation and a short explanation of the repairs completed either next to the ✓ or if there is insufficient room, at bottom of form.

(See Reverse Side)

DEFECTIVE

Brakes ☐	Fire Extinguisher ☐	Tire Chains ☐
Coupling Devices ☐	Fuses ☐	Tow Chain ☐
Horn ☐	Flags & Standards ☐	Jack & Tire Wrench ☐
Lights ☐	Flares ☐	Steering Mechanism ☐
Reflectors ☐	Spare Bulbs ☐	Tires ☐
Rear Vision Mirror ☐	Spare Electric Fuse ☐	Windshield Wiper ☐
Battery ☐	Engine ☐	Power Take-off ☐
Body ☐	Fuel Control ☐	Spark Control ☐
Chassis ☐	Gear Shift ☐	Speedometer ☐
Choke Control ☐	Generator ☐	Starter ☐
Clutch ☐	Leaks (oil-fuel-water) ☐	Transmission ☐
Cooling System ☐	Oil Pressure ☐	Other Defects (specify) ☐

ALL ABOVE ITEMS ARE IN SATISFACTORY CONDITION ☐

REPAIRS NEEDED:

Did You Have: A ROAD FAILURE? Yes ☐ No ☐. AN ACCIDENT? Yes ☐ No ☐

Was Any Cargo: LOST? Yes ☐ No ☐. DAMAGED? Yes ☐ No ☐. STOLEN? Yes ☐ No ☐.

Were You Delayed On This Trip? Yes ☐ No ☐. If Yes, How Long?_____

Reason For Delay:_____

INSTRUCTIONS TO DRIVER
(Read Carefully)

All Items Purchased for the Vehicle/s (identified on the reverse side) While Away From Any Company Shop MUST Be Accompanied by an Itemized Statement and Attached to This DRIVER'S TRIP REPORT, in Addition to Being Shown Below.

VEHICLE (road) EXPENSE

QUANTITY	DESCRIPTION	COST	TAX	TOTAL

LABOR:____Hours @ $_____Per Hour

TOTAL MATERIAL ..... $_____

TOTAL LABOR ..... $_____

TOTAL AMOUNT ..... $_____

REMARKS

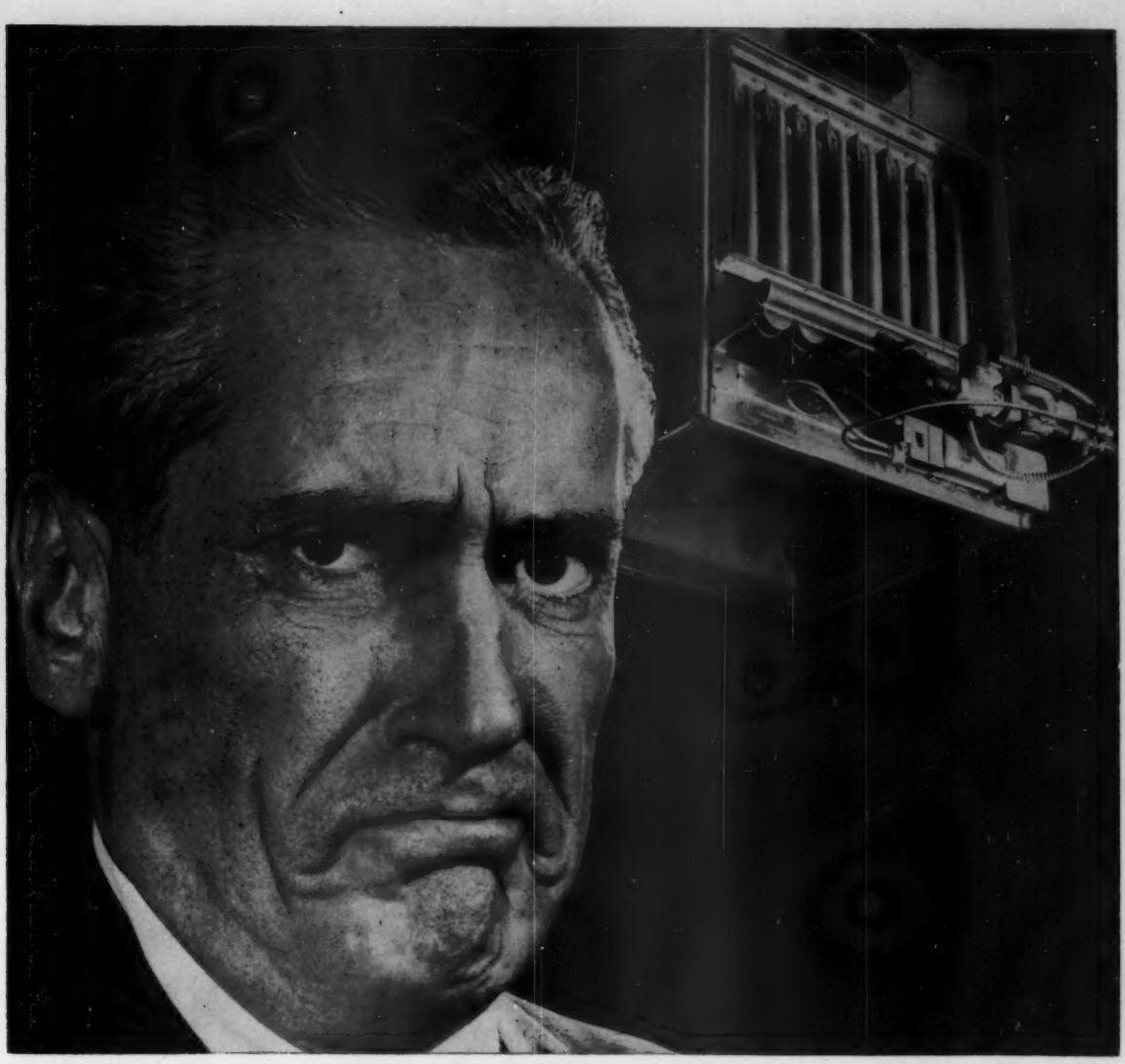
FORM TR-211 JACK-BELT, KANSAS CITY, MO.

Both the front (left) and back (right) of this Driver's Vehicle Condition Report" are filled out by each driver at the end of every day. On the front, he checks work to be done; on the back, he indicates any on-the-road expenses.

periods to spell the regulars who are away on vacation.

In effect, then, Griffith has a steady work crew the year around. The same men drive the same vehicle day after day and year after year, and they treat it as if they owned it. At the same time, the company has no peak-and-valley employee problems—no summertime "make-work" programs are necessary to keep the work force busy.

The whole Griffith theory of preventive maintenance is a sound one. It's widely accepted by top fleet owners. How much it might save the company is difficult to calculate. But the important thing is not the dollar-and-cents costs. It's the uninterrupted service that preventive maintenance makes possible. After all, its the gallonage hauled that counts. An idle truck is a liability. It's only when it's out there rolling that it's an asset in the true sense of the word. ■



TOUGH BUYERS

DEMAND REZNOR STAINLESS STEEL DUCT FURNACES

BECAUSE THE HEAT EXCHANGER AND BURNERS CANNOT CORRODE!

The plumbing, heating or air conditioning contractor has to be a tough buyer. He has to look ahead and consider possible trouble makers like corrosion in air conditioning, make-up or ventilation air systems. That's why so many contractors demand Reznor *stainless steel* duct furnaces: they *can't* corrode!

LOWER FUEL COSTS, TOO —The tough buyer wants to make sure his customers get even heat and lower fuel costs. That's why he appreciates Reznor "extras," like the gas modulating valve. As discharge temperatures rise, the valve cuts gas input to 20% of rated capacity, then shuts off the supply completely.

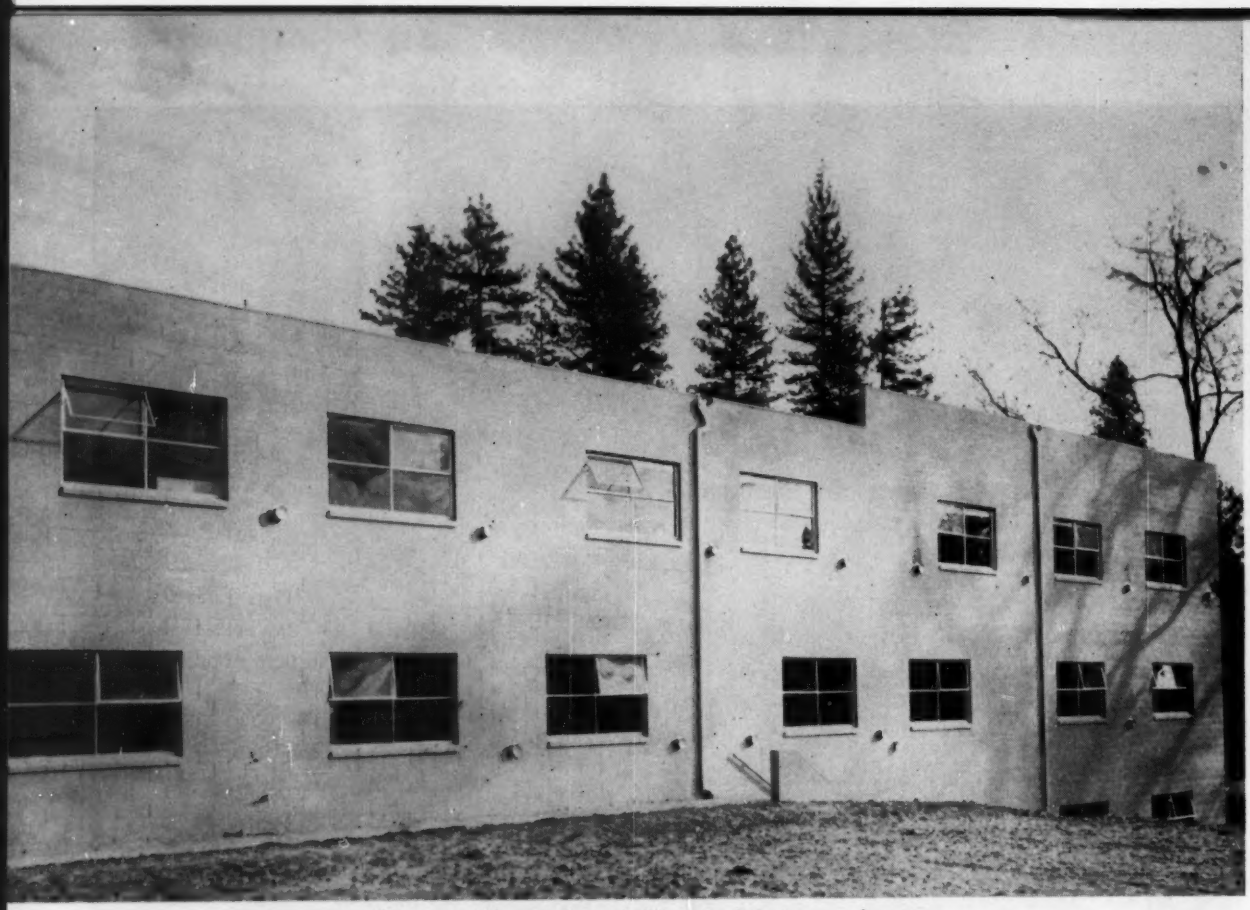
CHECK THE "TOUGH BUYERS' LINE" You can order and install Reznor duct furnaces in capacities up to 300,000 Btu. Use them in multiples for greater heat requirements. Buy matching Reznor blowers.

For the full story, phone your local Reznor distributor, or write to Reznor Manufacturing Company, Dept. 4 B, Mercer, Pennsylvania.

THE HEATING WORLD IS FULL OF TOUGH BUYERS; THAT'S WHY REZNOR IS THE WORLD'S LARGEST SELLING DIRECT-FIRED HEATER!

REZNOR HEATERS

"THE TOUGH BUYERS' LINE"



Thirteen outside vents from 13 different wall heaters are shown in this view of the Christian Education Building in Placerville, Calif.

Unique installation uses 34 wall heaters as most economical and desirable solution

The old axiom that what is best in one situation is not necessarily best in another is dramatically proven by this LPG heating installation story. One would normally think that one large central heating unit would be much more economical and desirable to install and use than a large number of small wall units. Yet, just the opposite was the case here.

"DESIGN a heating system that will give comfortable warmth, will be completely safe and will stay well within our limited construction and maintenance budgets."

These were the specifications given designer-builder Fred S. Hannaford of Placerville, Calif., by the El Dorado County Federated Church, also of Placerville.

The structure to be heated was the Christian Education Building. Its 13,350 sq ft house social hall, lounge, meeting rooms, and kitchen. Construction is concrete

Trinity's got it

NEW ASME CODE

OLD CODE
maximum payload
now greatly
increased by . . .

NEW CODE
authorizes 100%
joint efficiency tanks
fully x-rayed out
of 115,000
high-tensile
T-I Steel.

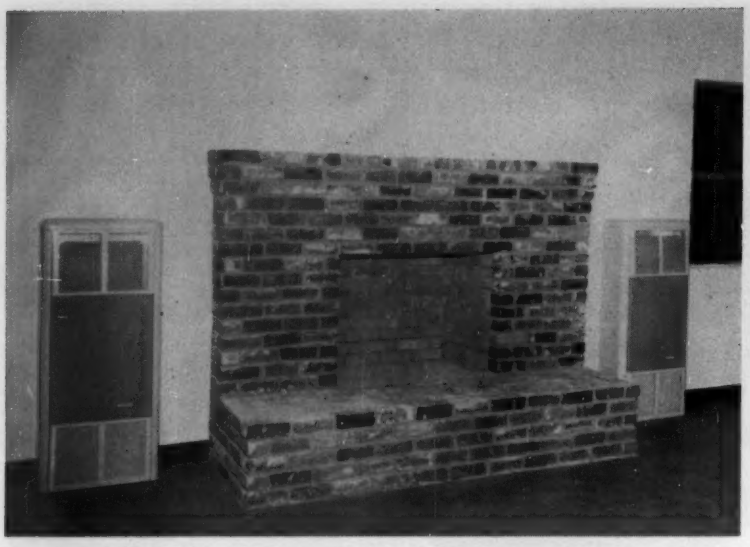
BIGGER PAYLOADS

Trinity Steel is first with New Code Transports . . . at the same low WG Capacity Cost! For example, a Trinity T-I Transport with a capacity of 8,920 net gallons under the old code now can be increased to 9,220 net gallons . . . at the same low WG Capacity Cost!

You get 300 net gallons *more* payload. Today . . . write, wire or call collect about *your* New Code Trinity T-I Transport. Join the happy list of customers who have made Trinity Steel Co. the world's largest fabricator of T-I Transports.

TRINITY STEEL CO., INC.
4001 IRVING BLVD., DALLAS, TEXAS, U. S. A., PHONE FLEETWOOD 7-3961
Latin American Division: Tanques de Acero Trinity, S. A. Calle Poniente 150 No. 734, Mexico, 16, D. F., Plant and Sales Office.

TRINITY STEEL COMPANY, INC.



Two of the Safti-Vent heaters flank a fireplace in this close-up. Bricks in the fireplace date back over one century to the gold rush days when Placerville was known as Hangtown.

block with roof and floors of prestressed concrete "T" slabs.

Occupancy of the building was to be intermittent, most areas to be used only for a few hours, 2 or 3 times a week.

The temperature in Placerville drops to a low of approximately 20 deg. and the heating system would have to raise temperatures from a cold start to a comfortable 70 deg. quickly and economically.

In studying the various types of heating equipment for this structure, Hannaford started with safety as the prime consideration. Room air could not be used for combustion, so the field was narrowed to central heating and zone heating employing wall heaters with sealed combustion chambers.

When the bids were received, the zone heating installation (using Safti-Vent wall units manufactured by H. C. Little Co.) was only 40 per cent of the figure for a central heating plant. This amazing and surprising difference in cost, the contractor explains, was due to the complicated nature of the central heating installation, as compared to the Safti-Vent set-up. Central heating would have required a large amount of duct work and venting, cold air returns, flues, etc.

All this was eliminated with Safti-Vent. A 7¼ in. diameter hole is cut in the outer wall and a prefabricated double channel vent is inserted to provide intake and outlet passages to the heater's sealed combustion chamber. Thus materials and installation time are greatly reduced.

Further study indicated that the flexibility of zone heating forecast an additional major economy in operating costs for this structure. Heat could be confined to occupied areas as needed, eliminating the cost of heating the entire structure.

A total of 34 Safti-Vent sealed gas wall heaters was specified. Seventeen were of 30,000 Btu capacity, 16 of 22,000 Btu capacity, and one of 16,000 Btu capacity, all equipped with thermostatic control. The installation permitted bringing up temperatures in any room—or in the entire building—to 70 deg. within 90 minutes.

A unique feature of this heating system is the central control board, designed and installed by William Lewis, the electrical contractor on the job. From this one panel, it is possible to control the heat in any of the many rooms in the building. In many instances, small groups will be conducting meetings in the social hall or the lounge, so heat is required for only these rooms. By merely flicking a switch on the control board, heat may be provided for a particular room, independent of the rest of the building.

An on-off time control mechanism can be controlled manually or by a time clock. In automatic operation, this clock may be set to go on and off at any desired time and can control each of the 16 zones individually.

LPG is supplied from a 1000-gal. bulk tank. Pressure is reduced to 15 lb at the tank and to working pressure at the building. The Placer Gas Co. of Placerville acted as consultant on the design of the fuel lines, now keeps the bulk tank full. ■

Electrical contractor William Lewis adjusts the time switch on the central control panel he designed for the 16-zone, 34-heater installation.

"Financing cylinder purchases with LINDE saved us money"

says John Rose, President, Propane Industrial Service, Willoughby, Ohio

"With the help of LINDE's financing plan, we were able to multiply our business several times in three years and we don't see a limit yet. Financing cylinder purchases with LINDE saved us more money than any other lease or purchase plan we ever heard of. It means we get the best cylinders at the lowest possible cost."

Mr. Rose has his largest investment in LINDE's PREST-O-LITE lift truck cylinders. Like all LINDE cylinders, they're built to last. One seam, not three, for light weight and high strength. Footring designed, constructed, and coated to prevent rust, and curled for strength and protection. The handhole is curled, too, for a comfortable grip.

Be sure to get the facts on how LINDE's Credit Plan can help you expand your business. Write Dept. BU-08, Linde Company, Division of Union Carbide Corporation, 30 East 42nd Street, New York 17, N. Y. *In Canada:* Linde Company, Division of Union Carbide Canada Limited.

"Linde", "Prest-O-Lite" and "Union Carbide" are registered trade marks of Union Carbide Corporation.

Linde

UNION CARBIDE

Only a portion of one of the five cooking school crowds is shown here. Held in four cities with a population total of 15,000, the schools attracted 2200 people!

Merchandising Idea

Firm marks 20th year with successful range promotion

WALTER A. SCHUETTE, president of Hausgas Inc., Washington, Mo., confidently expects to sell more gas ranges in 1959 than in any of the 20 years Hausgas has been in business. And all because of the success he has had in stirring up a controversy over whether a man can cook better than a woman.

It began when Schuette began casting around for an appropriate promotion to celebrate the company's 20th anniversary. He regarded a 20th anniversary as both a time for celebration and a time to heed a warning. Would Hausgas fall into the comfortable complacency that becomes the niche for so many companies who have successfully weathered the early, formative years?

The fear of complacency is almost a phobia with Schuette—but it's a healthy phobia because it constantly spurs him into action. In this instance, it prompted him to see if he couldn't stir up a new type of skirmish in the perennial battle of the sexes.

"Can a man cook better than a woman?" This challenging question, which began appearing in teaser ads in the weekly newspapers in the four principal Missouri towns served by Hausgas, was the opening volley. Elsewhere, in each issue, a similar teaser appeared, but this one twisted the question around to read, "Can a woman cook better than a man?"

These little square boxes, bordered with question marks, ran for four weeks in the principal newspapers. Toward the end of that time, Hausgas had business-size cards printed up with the same legend and distributed them around the towns. One was placed under the windshield wiper of every car found on the downtown streets. Under the legend was printed "(over)" and on the reverse side was the advice, "See (name of local newspaper and date)."

This reference was to the final ad in the series, which read "Can a man cook better than a woman? Get the answer at the Hausgas Cooking School. E. Carl Sorby, chef extraordinary, will show you how to have a 'picnic in your kitchen.'"

The tease worked. Five schools

What better argument for gas cooking than the mouthwatering appeal of freshly prepared food? All dishes were slightly undercooked, so they could be taken home (as doorprizes) and warmed.

were held, two in Washington, and one each in Sullivan, Hermann, and St Clair. A total of 2200 people turned out to see Sorby's masterful, amusing cooking demonstration and there are only 15,000 in the five towns!

The newspaper campaign was well supported by other promotion and advertising. As the buildup was nearing its close, radio spots on two stations were used. At this point, there was no "tease." Each 1-minute announcement told all about the schools, as well as all the prizes that were being offered to "students."

To customers, Hausgas sent a special invitation in a plain envelope, personally addressed. The feeling of special attention was conveyed by the request that the recipient be Hausgas' "guest" at the demonstration.

Hausgas also brought local stores into the act. Food used in the demonstration was supplied free by one or more markets. In addition, a variety of door prizes, including everything from potted plants to a $15 savings account, was offered. A "super" grand prize was an all-expense-paid three-day vacation trip by air to New Orleans. Other grand prizes included a Gold Star range and a 30-gal. glass-lined water heater.

Hausgas assured itself of support from home economics teachers by issuing special invitations which requested their presence to receive a corsage. It worked. Not only did they appear, but the Washington teacher also brought her class along to see the afternoon show.

Corsages were also given to the oldest woman in attendance, the newest bride, and the mother of the largest family.

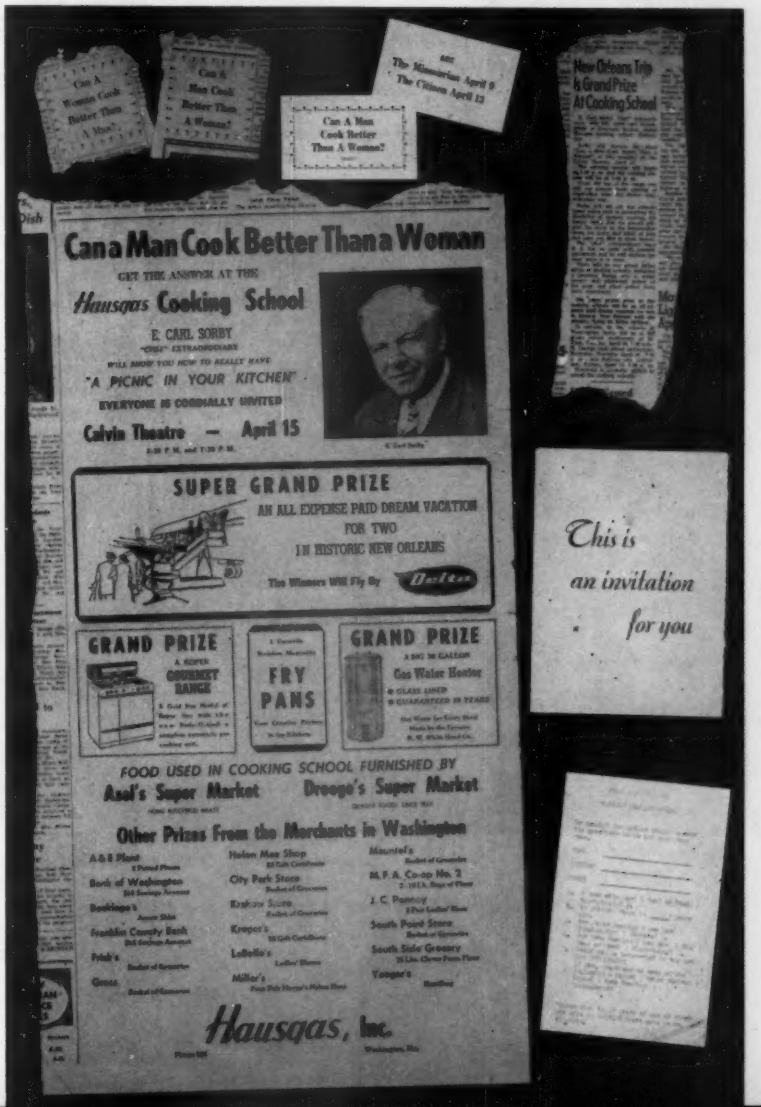
Dave Mathews, wholesale manager, who had charge of the shows and also acted as master of ceremonies, got them off to a relaxed start by inviting five or ten men to come up on the stage. An applause vote selected the "best lover," who was given a sport shirt for his popularity.

From then on, the show was all Sorby's and with his deft sense of drama he proceeded to prepare a groaning tableful of gourmets' delights, using a motley assortment of pots and pans to prove that the range (a Gold Star model) is the thing. Each dish was slightly undercooked so it could be given away as a prize and finished on the winner's own range at home.

Not only did the event stir up tremendous interest in gas cookery in the Hausgas area, but it also provided the company with a census of household equipment and a gold-plated prospect list. Registration blanks for the drawings required that each person list name, address, phone number, and present fuel used for cooking, water heating, and househeating. This automatically gave Hausgas information on 2200 "suspects."

The final question was designed to make work for Hausgas' salesmen. "Would you be interested in any new gas appliances (and if so which)?" Four-hundred-forty answered in the affirmative, giving the salesmen 440 doorbells to ring.

Was the promotion costly? You bet. But if it turns even a small percentage of the 440 prospects into buyers, it will have paid for itself. It will be difficult to appraise the results directly, but if 1959 turns out to be—as Schuette predicts—his greatest year in gas range sales, it's safe to say that this one promotion will have had a lot to do with it. ■



The Hausgas cooking schools successfully employed the standard elements of a good promotion. Newspaper teaser ads (top left) and teaser cards for windshield distribution (top center)aroused public interest toward the large newspaper ad announcing the promotion (bottom left). Free newspaper publicity in the form of a front page story (top right) added to the snowballing effect, as did personal invitations (center right). Guests became prospects when they filled out a registration-for-doorprizes form (bottom right).

Requirements for mobile homes, ok'd by utilities, LPG groups, are back to AGA

A PROPOSED set of approval requirements have been approved by gas utilities and LPG groups and are now undergoing final revisions by AGA's requirements subcommittees. The codes cover installation of gas appliances in trailer coaches and mobile homes.

These proposed additions to the current American standards were sent out last March by the American Gas Association Laboratories. They cover installation of gas water heaters and gas central furnaces for trailer coaches and mobile homes. After being studied, they were returned with criticisms and comments.

Final approval is not expected until sometime in early 1960.

At the time of writing, a proposed standard for gas ranges had not as yet been circulated.

This is the first attempt on a nation-wide basis to set up a separate set of standards for trailer coaches and mobile homes as distinguished from conventional homes. It recognizes rapid growth of this type of housing. Today, approximately 150,000 house trailers are being produced annually in the United States with a total gross valuation of $650 million. Ten years ago, only 46,000 were built each year. Today, 3.5 million people live in trailers. It has been estimated that 10 million could be living in trailer parks by 1970.

At present, the number of trailer coaches in use is estimated to exceed 1.1 million.

The new proposed requirements recognize for the first time the distinction that exists between mobile homes or trailers. The former, due to their size and type, should be considered as permanently or relatively permanently located in the trailer park, as opposed to trailers which, due to their size and type, could be subject to relatively frequent movement from one location to another. The proposal sets up separate parts for the two classifications. The one covering the first of these classifications provides for units which can be used interchangeably with natural gas and L. P. gases.

Several features have been added which are applicable only to appliances intended for trailer coach installation. Among other things, these:

- Provide for altitude flexibility since a trailer may be moved from sea level to high altitude fairly frequently.
- Give assurance that the appliance will not be damaged by road movement or vibrations.
- Permit a lesser venting height in a trailer than is specified in current requirements.
- Assure an adequate supply of outside air for combustion and specify a draft hood in the same pressure zone without having a flue projecting an objectionable distance above the roof of the trailer.

In general, the requirements for interchangeable situations call for means for making a simple conversion from one gas to another by the customer, such as by the turning of a tool operated selector valve and change of orifices. Only automatically operated furnaces which incorporate a means for the ready conversion from one gas to another without the use of special tools will be accepted for approval. Additionally, clearly defined, legible, and complete instructions for converting the furnace from the use of one gas to another are called for. Provision is also made for the use of a gas pressure regulator with natural gas, but it is eliminated when LPG is being used.

Income tax rules covering auto or truck leasing

Internal Revenue Service recently outlined Federal income tax rules covering deduction of amounts paid for leasing of automobiles or trucks.

"Auto or truck lease payments are deductible only if they represent ordinary and necessary expenses of—and are directly attributable to—the operation of a trade or business," the agency explained.

"Under no circumstances are such lease payments deductible to the extent they represent personal use by a taxpayer, such as vacation trips or driving to and from his place of business or employment.

"No deduction will be allowed for so-called lease expenses which, in fact, constitute payments toward the purchase price of autos or trucks. If the lease payments are so arranged as to constitute advance rental, such payments must be duly apportioned over the entire rental period."

AHLMA establishes vocational education plan

Formulation of a plan to establish vocational education for home laundry appliance servicing has been announced by the Parts and Service committee of the American Home Laundry Manufacturers' Association.

The plan is designed for use by state directors of vocational education, local representatives of education and industry, public or trade school officials, and other business representatives interested in establishing an appliance service training school or course.

In addition to the general courses offered by the schools under the plan, supplementary training may be offered on individual brand characteristics by each manufacturer.

Offered in the preliminary plan book is an outline of how to go about setting up such a course, a review of a highly successful program, a list of instruction units available for use in conducting the course, publications available from AHLMA, and a directory of parts and service executives of home laundry appliance manufacturing concerns.

Copies of the plan book are available from AHLMA, 20 N. Wacker Dr., Chicago 6.

Operates in Any Mounting Position
Top Mounted
Bottom Mounted
Head Mounted
CHEK-LOK
REGO
No. 7580C. 1¼" NPT (male) Inlet; ¾" NPT (Fem.) Outlet. Closing flow approximately 24 gpm of LP Gas.
No. 7572C. ¾" NPT (male) Inlet; ¾" NPT (Fem.) Outlet. Closing flow approximately 12 gpm of LP Gas.

convenient, safe, liquid withdrawal with

REGO® CHEK-LOK

excess flow valves

Economical RegO Chek-Loks are specially designed excess-flow valves with the check in a closed position and the outlet plugged. They may be top, bottom or end mounted, and provide the quickest and most convenient low-cost method of connecting to the tank for liquid transfer and evacuation with complete protection against liquid or vapor losses in the event of line breakage.

A new high capacity RegO 7550 liquid transfer valve has been developed especially for use with RegO Chek-Loks. Fitting the transfer valve with a RegO 7572C-14 adapter permits quick, positive connection to the Chek-Lok against a gasket, and automatically provides full opening of the check for adequate flow capacity.

By installing RegO Chek-Loks on all your tanks, and making the high-capacity 7550 valve and adapter standard equipment on every service and delivery truck, you eliminate the need for separate transfer valves at each tank . . . a substantial saving without sacrificing safety!

here's how CHEK-LOK works:

To withdraw liquid, first remove plug from Chek-Lok unit.

Screw in RegO 7550 transfer valve. This automatically actuates Chek-Lok mechanism. Close 7550 transfer valve—pressure equalizes and check valve opens, allowing transfer valve to control liquid flow.

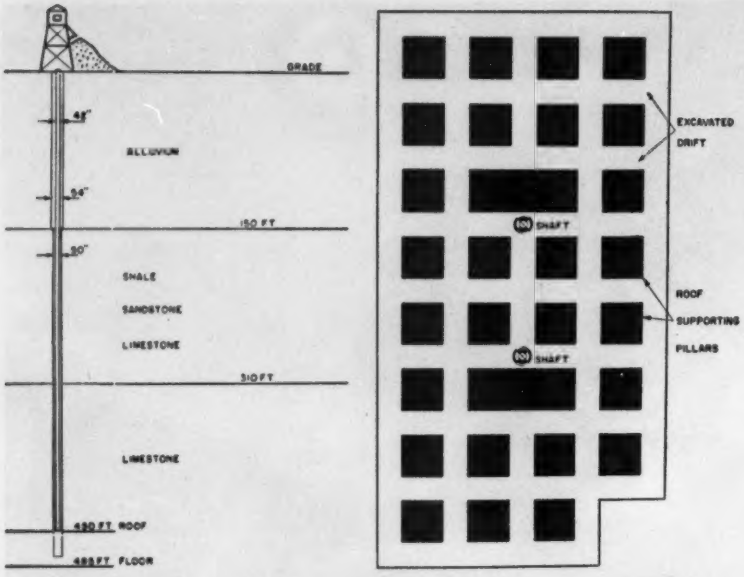
To remove valve after use, open transfer valve wide to slug excess-flow valve, unscrew transfer valve and replace plug in Chek-Lok unit.

write for complete information

The BASTIAN-BLESSING Company

4208 West Peterson Avenue, Chicago 46, Illinois

DO YOU KNOW it will pay you dividends to join!



Shell Oil's Wood River butane storage cavern as it will look upon completion is shown here in vertical (left) and horizontal (right) cross sections. The vertical cross section shows one of the two shafts and the various layers of the earth's strata through which it must be drilled. The horizontal cross section is the floor plan of the cavern itself, the black squares being pillars that hold up the cavern "roof."

Details of Nation's "largest" LPG cavern

The nation's largest single, mined LPG storage cavern will be carved 450 ft below Shell Oil Co.'s Wood River, Ill., refinery, approximately 15 miles northeast of St. Louis. Briefly reported as late news in last month's BPN, this huge project has many interesting details.

The cavern, which occupies three acres, will hold 425,000 bbl of butane. It will accommodate the refinery's over-supply in summer, holding it for winter use when large quantities are needed for consumer usage and for company use as an additive in manufacturing winter grade gasoline.

Shell's first subterreanean mined storage cavern, the project was under study for five years. Plans call for it to be completed in less time than any comparable project.

As shown in the accompanying diagrams, two 42-in.-wide, 450-ft-long shafts are being sunk into limestone. One man is sent down to the bottom of each shaft to dig until he has made enough room for more workers. When the hollowed area reaches a capacity of 20,000 to 25,000 bbl, heavy equipment (dismantled bulldozers, automatic loaders, narrow gauge railroad bucket cars, etc.) goes down.

The digging proceeds in all directions, following a grid pattern with 25-ft-wide, 35-ft-high tunnels separated by 40-ft-square pillars.

The mined rock will be hoisted out by ⅓ cu yd buckets that travel at 2200 fpm. With buckets operating in both shafts about 20,000 tons of rock can be hauled up each month.

Drilling and mining is on a three-shift, 24-hour-per-day basis. Blasting will be during shift lunch periods when all personnel are above ground.

When the project is completed, the shafts will be capped. Then the cavern will be pressure tested and purged with an inert gas. Butane stored in the cavern will always remain at a temperature of 60 deg. F.

Suburban Propane names three men to new posts

Carl M. Schroeder, formerly manager of the Suburban Propane Gas Corp. district at Montgomeryville, Pa., has been named assistant to the general sales manager at the firm's general offices on Route 10, Whippany, N. J.

Schroeder has a record of more than 28 years of service in the propane business.

Charles M. Humphries will take over Schroeder's duties at Montgomeryville, Pa. He has been with the company since 1940.

William L. Chapman will represent the company in the state of Florida. Prior to his appointment, he was assistant to the district manager at the company's bulk plant in Rockville, Md. He will service the firm's industrial accounts in northern Florida, having been with Suburban since 1947.

Bryant air conditioner is now in production

The first 3-ton residential gas air conditioner manufactured by Bryant Manufacturing Co., Indianapolis, Ind. came off the production line May 13 in a ceremony attended by many of the company's top executives and engineers.

An air-cooled absorption refrigeration machine designed for outside installation, the unit uses ammonia and water as the refrigerant and absorbent.

Distribution west of the Rocky Mountains will be handled by the Day & Night Manufacturing Co. and the Payne Co., also operating divisions of Carrier Corp.

City Gas names Self assistant general manager

J. T. Self was recently appointed assistant general manager of City Gas Co., Miami, Fla. For nearly 20 years he was an official with the South East Public Service Co.

J. T. Self

(Natural Gas division) of Charleston, W. Va., and assistant general manager in charge of all its production, distribution and transmission of gas in three states.

Also announced is the appointment of Charles E. Thomas as comptroller for City Gas Co. and internal auditor for both Dade Gas Co. and South Dade Gas Corp.

Thomas comes to City Gas and its affiliated companies from the national accounting firm of Ernst & Ernst.

Helps my reputation for quality heating work

suburban COUNTER-FLO WALL HEATERS

It heats better—Is more compact and better looking

When a heating job is complete the best advertising I can get is the complete satisfaction of the owners. This Suburban Counter-Flo has a fan that forces air downward and heats floors first . . . continuous air circulation heats all corners of a room. In addition, this is the most compact, best looking wall heater I've seen. It's available in either single or dual-wall models up to 50,000 BTU. As a clincher, *the heat-exchanger is guaranteed for 20 years*, and Suburban is approved by the American Gas Association! Mighty attractive price, too. It will pay you to get the details. It did me.

For a Low Cost Gravity Wall Heater You Can't Beat Suburban Either!

Suburban's Gas-Fired Gravity Wall Heater has more value at a lower price than any other wall heater. Just check the coupon for all the low-price details.

Floor Furnaces. The same high quality and low price is available in Samco Floor Furnaces. If you *ever* use a floor furnace, get the information on Samco.

suburban
Counter-Flo Wall Heaters
by the makers of famous Suburban Built-in Ranges

Samuel Stamping & Enameling Co., Dept. BPN-89, Chattanooga, Tenn.
Rush complete details on: Counter-Flo Forced Air Wall Heaters ☐
Gravity Wall Heaters ☐ Floor Furnaces ☐

Name_____

Company_____

Address_____

City_____ State_____

Merchandising

Roper "Round-Up" sale features special ranges

The Geo. D. Roper Sales Corp. has scheduled the "Roper Round-Up Days" sale for its dealers this summer and early fall.

The campaign is built around the 36 in. and 30 in. special gas ranges which meet Gold Star requirements.

Round-Up Days dealer aids include: floor display, newspaper ads, direct mail folder, full-color newsprint broadside, window streamer, radio scripts and price tag; all with a Western "Round-up" motif. Three premiums are also offered.

Dealer premium helps sell high-quality furnaces

A heating products dealer operating in the Chicago area has found a solution to the problem of assuring high quality in home heating installations and still meeting price-cutting competition.

Home Gas Industries Inc. is giving large-scale home builders a bonus of Honeywell automatic control equipment when they purchase furnaces at list prices.

The builders like the deal because they realize the indoor-outdoor controls will upgrade the heating installation and serve as a premium in selling homes.

"We like the deal because it enables us to maintain our price structure on furnaces and helps us combat the growing tendency of some builders to install equipment that meets only minimum requirements," said Don Dorge, Home Gas general sales manager.

"And it costs only one-half as much per unit as it would to cut furnace prices to meet competition!"

It's the BROWN
Featuramic
GAS RANGES
GOLD STAR AWARD
AMERICAN GAS ASSOCIATION INC.
uality in every detail
From top to bottom . . . this is a quality range. The all new BROWN Featuramic Gas Range offers you more in every respect. Quality features, distinctive styling and satisfied customers. There is a good profit margin, too! Insist on the range with Quality in every detail — BROWN.
Manufactured By
BROWN STOVE WORKS, INC.
CLEVELAND, TENNESSEE

Merchandising Notes

The first professional chair to be endowed at the School of Business Administration of the American University, Washington, D. C., has been established as the Whirlpool Chair of Marketing. Created through a grant from the Whirlpool Corp., the new chair will conduct research into problems and trends in marketing and will make special studies of the home appliance industry for the purpose of helping appliance retailers improve their marketing and management skills.

Fuelane Corp. broke advertising and publicity in June for its Happy Cooking Holidays Sweepstakes which features free vacations for three couples to Bermuda, Jamaica and Nassau. Dates for the promotion are August 15 to October 31. A contest for retail employees will send the winner and his spouse to Bermuda, while dealer contests will send winners and their spouses to Bermuda, Jamaica, and Nassau.

NEWS NOTES

A new propane gas distributing firm has moved into Saint John, N. B., Canada. Atlantic Speedy Propane Ltd. is building a plant on Bayside Dr. E. C. Mackie will head up the new operation.

A $3 million gas products plant will be built in Eddy County, N. M., by Skelly Oil and Sinclair Oil & Gas companies. Skelly will serve as plant operator. Initial operation of the plant is planned for April 1960. It is to have compressor capacity designed to gather and compress 12 million cu ft of gas daily and processing equipment to process 20 million cu ft per day. Initially, the plant is expected to recover 48,000 gal. of natural gasoline, butane and propane daily.

Consolidated Vaporizers Inc., 2103 First National Bank Bldg., Denver, Colo., has been incorporated to manufacture, sell and distribute vaporizers, fixed and otherwise, on tanks for use with L. P. gas.

Ray Doman, 58, retired propane-butane service operator, died June 7 at Memorial hospital, Casper, Wyo. He launched a propane-butane gas service in Lusk, Wyo., in 1940, which he moved to Casper in 1947.

An improved method of palletized packing of water heater controls, is being used by Grayson Controls division, Robertshaw-Fulton Controls Co. The controls are packed in large cartons which are easily opened and removed, exposing stacked trays of controls on a pallet skid at a work station.

Kirk Industries Inc. has appointed the Glenwood Range Co. as distributor for "Kirk" gas refrigerators in the six New England states.

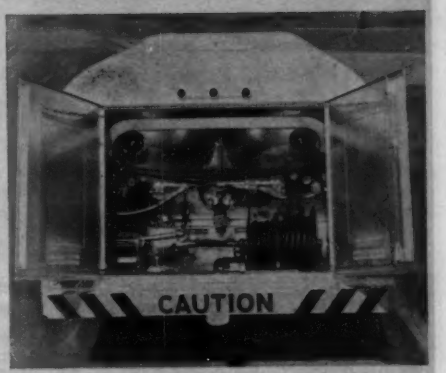
Frank Chapman, publisher of BUTANE-PROPANE *News* and GAS magazines, has been named a judge in the third annual public relations Achievement Awards contest of the American Gas Association. Two other men, H. Walton Cloke, president of the Public Relations Association, and Carroll R. West, president of the Public Relations Society of America, have also been named judges.

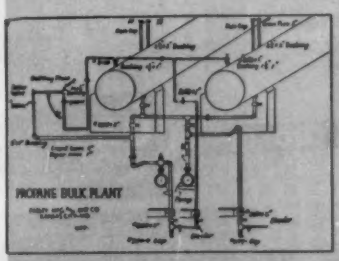
Your One Supplier with everything in L. P. gas and Anhydrous Ammonia Equipment

"The Loadmaster" LPG Truck Tank

SQS

PASLEY-DESIGNED Truck Tanks (see above and right) were first to feature all controls from one location. All operation is from one point—rear compartment.





BULK PLANTS Pasley LPG and Ammonia type installations — a turnkey job or engineering for your own installation. Write, wire or call.

Also a complete line of accessory equipment.

"Pastels By Pasley"

COLOR — The Modern Trend! Bring your LPG Equipment up to date. Available in the following colors . . . (write for information)

Blush Peach	Smoky Grey
Sunshine Yellow	Seafoam Blue
Mustard Lime	Wedgewood Green
Eureka Orchid	Rose Beige
Lake Blue	Desert Rose

SQS

"EVERYTHING IN LPG AND ANHYDROUS AMMONIA"

The Pasley Mfg. & Dist. Co.

601 East 11th Street • Kansas City, Mo. • Tel. Victor 2-2369

Propane-fired burners at this end of the air heater designed and built by Hirt Combustion Engineers, Montebello, Calif., supply 20 million Btu of 1500 deg. F air per hour for converting liquid oxygen or nitrogen to gaseous form at Wyle Laboratories' missile testing facilities. John Hirt (center), head of Hirt Combustion, points to the combustion chamber as Richard Crobin (left), and Robert B. Grant, of Minneapolis-Honeywell, inspect the unit prior to installation.

Pennsylvania Range starts its expansion program

Pennsylvania Range Boiler Co., Inc., Philadelphia, has embarked on its announced expansion program with the purchase of the two-story, 53,000-sq-ft American Ice Co. plant.

The new property is on Ellsworth Ave. directly across from the firm's main site.

In announcing the purchase, William K. Goldstein, president of Pennsylvania Range, said the firm has already begun extensive renovation and will spend over $100,000 in modernizing and improving the building. Production and warehousing facilities now located outside the main plant will be moved to the new facility when it is completed.

"A second phase in our expansion program," continued Goldstein, "is diversification of our manufacturing interests. We are currently looking into the acquisition of other companies in fields allied, but not directly related, to our present operation."

Cribben & Sexton sells its space heater business

Cribben & Sexton Co., Chicago, has sold its "Constant Comfort" gas space heater business to Suburban Appliance Co., Whippany, N. J., the firms announced jointly.

The sale includes Cribben & Sexton's present inventory of heaters and parts; work in progress; tools, dies, and jigs; the "Constant Comfort" trade name; and patents, Wendell C. Davis, president of Cribben, and Albert H. Cote, president of Suburban, said.

Cribben & Sexton, a subsidiary of Waste King Corp., Los Angeles, sold the space heater business because it is inconsistent with the firm's distribution pattern for other products, Davis said.

Production equipment and inventory will be shipped from the Cribben & Sexton plant in Michigan City, Ind., to Suburban's plant in Dayton, Tenn.

A newly-designed highway sign for the L. P. gas and natural gas industry is now available through Beals Advertising Co., 1503 N. E. 23rd St., Oklahoma City, Okla. Created and produced in conjunction with the Unified Highway Advertising program it is available in two sizes to accommodate all segments of the industry. The copy panel on the right of the flame can be changed to fit the needs of the individual company. Easily readable by day or night, it is finished in four fluorescent colors, with "Scotchlite" flame and lettering.

Honolulu Gas makes changes in sales group

The Honolulu (Hawaii) Gas Co. announces changes in its sales organization and its subsidiary organizations.

William Haxton has been transferred from managership of the Maui Island branch to manager of merchandise sales in Honolulu.

Wallace Oi was appointed manager of the Maui branch.

Dale Teel has been appointed assistant to the general sales manager in Honolulu. In addition, he will assist in the overall operation of the sales department. Rowland Kieburtz will continue to assist him.

James Putnam became manager of gas sales in Honolulu. Miss Angeline Gomes has been appointed office manager and prospect coordinator of the distribution plant of the company.

Schutte & Koerting gets interest in Whitlock

Schutte & Koerting Co., Cornwells Heights, Bucks County, Pa., has acquired a majority of the outstanding shares of the Whitlock Manufacturing Co., West Hartford, Conn.

The Whitlock line of heat exchangers, heaters, coolers, etc., will be allied with Schutte & Koerting's product line, which includes jet apparatus, rotameters and flow indicators, valves, pumps, and heat transfer apparatus.

According to Udo W. Fischer, president of Schutte & Koerting Co., operations of Whitlock will continue at West Hartford, and no change in name, products, location or personnel is anticipated.

Pond-Johnston buys Sel-Pac of Texas

Selwyn-Pacific of Texas Inc., 2024 Farrington, Dallas, Texas, has been purchased by Pond-Johnston Inc.

Effective June 23, the name was changed to Pond-Johnston of Texas Inc. and the operation was moved to new and larger warehouse and office facilities at 6108 Wyche Blvd., Dallas.

The company has appointed L. D. Downing as its western division manager. He was formerly general manager of Teeco Products, Los Angeles, distributors of LPG equipment.

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6 CHANGES for Every *Enterprise* Styleline Range Off-n-On in Minutes

Only ENTERPRISE offers this quick-changing backguard insert! In just a few moments, you can show customers one range with 6 different backguards—in their choice of Decorama colors. Every Enterprise Styleline Gas Range you stock means 6 choices for your customers!

In just minutes, you can change backguard inserts in smart colors designed to match kitchens and electric appliances.

Coral Pink	Canary Yellow	Chinese Red
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Backguard inserts are interchangeable on all 36" and 30" Enterprise Styleline Gas Ranges. This is a great, sure-to-sell feature to appeal to every housewife! Order now and start pulling in profits!

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Rated capacity 45 cfh propane and 40 cfh butane at ½-inch w.c. differential — 5 psi working pressure — ½-inch F.P.T. connections — shipping weight 8 lb. F.O.B. Philadelphia.

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NEWS NOTES

Siemon Manufacturing Co., manufacturers of a complete line of power heating equipment for industry, commercial buildings, schools, churches and homes, is making its third move for expansion purposes since the business was founded in 1949, according to company president, Charles D. Jones. Located in Grandview, Mo., the new plant houses the complete factory and laboratory facilities, as well as greatly increased office space, within an area of 20,000 sq ft.

Bowers Gas & Appliance Corp., 106 Adams St., Horseheads, N. Y., has been granted charter of incorporation listing capital stock of $75,000—$1 par value.

Charles M. Francisco was re-elected president of Fuelane Corp. at the company's recent board of director's meeting. Also re-elected were Roy R. Johnson, vice president; A. Burton Prettyman, vice president of sales; and Leonard T. Osterhoudt, secretary-treasurer.

Arkla Air Conditioning Corp., Little Rock, Ark., announces the appointment of Thos. F. McNally Associates, Kalamazoo, Mich., as its agent for the Sun Valley residential air conditioner, Humphrey unit heater and space heaters, and Arkla gas lites for Michigan and northern Indiana.

Carpenter & Dunn Inc., which manufactures and sells bottled gas, has been granted charter of incorporation listing capital stock of 200 shares no par value. The firm is located on Highbridge Road, Dewitt, N. Y.

Charter of incorporation has been granted to Jonetts Bottled Gas Service Inc. Located in Lake Ronkenkoma, N. Y., it lists capital stock of 200 shares no par value.

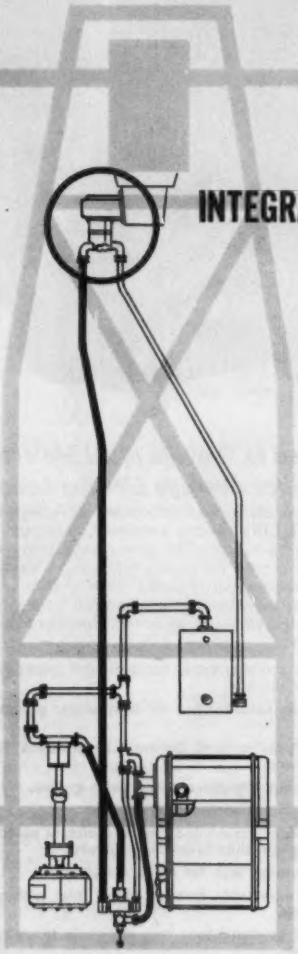
Peter C. Larkin has been appointed commercial cooking equipment manager for the Suburban Appliance Co. He was formerly associated with the Suburban Propane Gas Corp. as sales manager at that company's Belvedere, N. J., district from 1953 to 1957. In 1957 he was transferred in that capacity to the company's Ithaca, N. Y., district.

W. L. Parcell, vice president and sales manager of the Ridge Tool Co., and P. W. Tritsch, manager of P. T. Tools division of G. N. Raymond Ltd., sign new license agreement. Under this agreement, Tritsch will direct the manufacture and sales of Rigid tools in Australia and New Zealand from his company's headquarters in Melbourne, Australia. Production will start immediately.

NOW FROM HANNAY

INTEGRAL HYDRAULIC PTO

The integral power take-off and hydraulic pump from HANNAY eliminate mounting saddle, jack shaft and universal joints.
For efficiency, economy and flexibility in hydraulic LP-Gas delivery, *SPECIFY* hose reels and hydraulic components by HANNAY . . . first choice among progressive LP-Gas dealers.



Hose Reels by HANNAY

See your LP-Gas Equipment Supplier or write to Hannay for complete hydraulic delivery information.

CLIFFORD B. HANNAY & SON, INC., WESTERLO, NEW YORK

Speedway Products gets west coast sales office

A west coast sales office has been established by the Speedway Products department, Linde Co., division of Union Carbide Corp., in order to provide better service for L. P. gas dealers in that area.

David B. Carse Jr. and David Dixon are the Linde sales representatives for all types of butane and propane cylinders, manifolds and other related equipment manufactured at Linde's Speedway, Ind., factory.

Carse and Dixon will be located at Linde's district office at 2770 Leonis Blvd., Los Angeles (Vernon) 58.

A. O. Smith starts production in new plant

Production of Permaglas water heaters has just been initiated at a new A. O. Smith plant in Newark, Calif.

The 250,000 sq ft plant has undergone extensive remodeling and repair since its acquisition by A. O. Smith. It is located on 21 acres of land adjacent to the Southern Pacific main line. The plant is about 18 miles south of Oakland, 15 miles north of San Jose and 25 miles from San Francisco.

According to J. H. Brinker, vice president, production capacity will be 10,000 units a month on a one-shift basis. It is estimated this could be increased to 25,000 when warranted.

Brinker also disclosed that Don Hartquist, formerly plant engineer at Kankakee, Ill., has been named manager of the Newark works. Hartquist said that the new plant will function as a branch manufacturing operation. Product engineering, production scheduling, purchasing, central accounting, tool design, methods and planning, and plant engineering design will continue at the Kankakee center.

Trinity opens fabricating plant at Francisville

Trinity Steel Co. has opened a new plant to manufacture 110-1000 gal. systems. The new plant is located in Francisville, Ind., according to Ray Wallace, president.

Edward O. Haltom Jr., son of the vice president of the Dallas concern, will be manager of the Francisville plant, which is 40 miles north of Lafayette, Ind., and 90 miles south of Chicago.

The fabrication plant will serve a 12 state area.

Holding a dish of butter she made in her Maytag automatic washer is Mrs. Alex Bakan, who with her husband operates a dairy farm at Burgaw, N. C. When a breakdown in the firm's milk cooling equipment occurred the Bakan's were faced with the disposition of 100 gal. of milk daily. They decided to make butter from cream taken off the milk. The only container large enough to hold the cream proved to be their Maytag washer. Result — 486 packages of butter in their freezer!

New Viking LP-Gas Pumps give...

STILL LONGER LIFE

The new *automatic pressure lubrication of Viking 28, 35, 70 and 90 G.P.M. LP-Gas pumps is another important step ahead in pumping efficiency. Liquid is automatically forced into bearing, regardless of pump rotation.

Add to Viking's exclusive new automatic pressure lubrication, these other Viking LP-Gas pump features . . .

- Positive thrust control for long pump life
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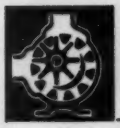

. . . and you have a combination that means still better and longer pump service for lower cost operation.

* Patent Pending

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VIKING PUMP COMPANY

Cedar Falls, Iowa, U.S.A. In Canada, it's "ROTO-KING" Pumps

See Our File in Butane Propane Catalog

Two executives of an Italian stove factory near Milan were guests of Locke Stove Co. recently. Since 1949 they have been manufacturing Warm Morning gas and coal heaters under license for sale in Italy and other European countries. Shown (left to right) are A. J. Estes, Locke vice president; Enrico Baj-Macario, managing director, Fonderie E. Officine Di Sarrono S.p.A.; E. M. Douthat, Locke president; Dr. Paolo Alberti, president of the Italian firm; and E. M. Douthat, Jr., Locke vice president in charge of sales.

NEWS NOTES

The Duo-Therm division of Motor Wheel Corp., Lansing, Mich., is launching a 3-year drive to establish 50 authorized service distributors and 2000 authorized repair stations throughout the country. A factory education program will be given to the service distributors in the field during the summer. Don Houghtaling, Motor Wheel's general service manager, and Lowell Davis, Duo-Therm service manager, will administer the program.

One of a series of car cards prepared for the American Gas Association and offered to gas companies throughout the country has been selected as the National Association of Transportation's "Car Card of the Year" by a panel of agency heads. Michigan Consolidated's winning card read: "Much more hot water with Gas!"

Tri-County Gas Co. is currently engaged in an expansion program. Jesse Barfield, manager of the company, which has headquarters in Tifton, Ga., said a new installation with a capacity of 36,000 gal. of butane is being placed in Pearson. A total of 24,000 gal. is being added to the facility in Adel, making the total capacity at that point 60,000 gal.

Comforteer GAS HEATERS

UNVENTED VENTED

FOR FAST TURNOVER AND FULL PROFITS . . .

COUNT ON COMFORTEER'S LOW BTU LINE!

Model 135

Model 135 — A small heater with large capacity, this model is a real profit item. Designed especially for use where a lot of heat is required. Unvented, fume-free with 35,000 BTU input.

This is just one sample of a complete line of quick selling, high profit unvented heaters by COMFORTEER.

Model 330 — A high styled vented heater, this model is designed to appeal with design and function. Featuring LOCK-SEAM, no weld construction, this unit has slotted, raised ports for trouble-free, economical gas-flow. 20-30-40,000 BTU models.

You can count on COMFORTEER'S five models of vented gas heaters for fast turnover and sure profits.

Model 330

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Washington Details

Businessmen getting active in politics

The campaign to get businessmen interested in active politics is mushrooming.

Widespread management participation in practical politics could materially alter present political trends. The same drives and skills that make businessmen successful will also eventually make them political leaders. This would weaken union and farm group domination of many local political organizations.

So far, the campaign to get management into practical politics has shown amazing results. Such groups as the U. S. Chamber and the National Association of Manufacturers have for years been trying to get such a drive under a full head of steam with only moderate success.

But it took the tremendous licking business-backed candidates suffered in last November's congressional elections to finally turn the trick. Now, hosts of big and little firms are for the first time actively pushing their executives and employees into politics. Some have set up their own programs, while many have relied on programs set up by the U. S. Chamber or a fairly new organization, the Effective Citizens Organization of New York.

Since it was formed in 1954, ECO has conducted some 25 two-day courses in politics for businessmen. These seminars, continuing at the rate of about two a month over the country, are held in conjunction with a college or university. College political experts and professional politicians from both parties instruct those attending in

the arts and tools of practical political activity.

For most firms, a program to get management into politics consists of several steps. The first is usually some type of course in basic civics—what government is, how it is run, and the structure, function, and make-up of political parties from the precinct to the national committee. Analysis of problems, issues, and candidates on a nonpartisan basis usually follows. Then, management and employees become active in the party of their choice, speak out, and keep in close touch with elected officials, boards, and commissions from the local to the national level.

Co-op tax loophole may be plugged in '60

Congressional leaders are predicting that legislation to set up an unavoidable single-tax on profits by cooperatives will pass before the current two-year session of Congress ends about one year from now.

This year, backers of closing a court-created loophole in co-op taxation expect legislation to get no further than approval by the House. But legislation not finally acted on will carry over to 1960.

Co-op taxation legislation, recommended by the Treasury Department and backed by L. P. gas dealers and other businessmen, would not go as far as requiring co-ops to pay normal corporate taxes. Nor would it tax payments to patrons, as stockholders are now taxed. But it would limit the virtual tax-free operation which co-ops now enjoy.

At present, a co-op may "distribute" all profits through patronage refund certificates and escape any tax on income. These paper refunds are not taxable to the person receiving them. The actual cash is retained by the co-ops for expansion, salaries, or whatever purpose they please.

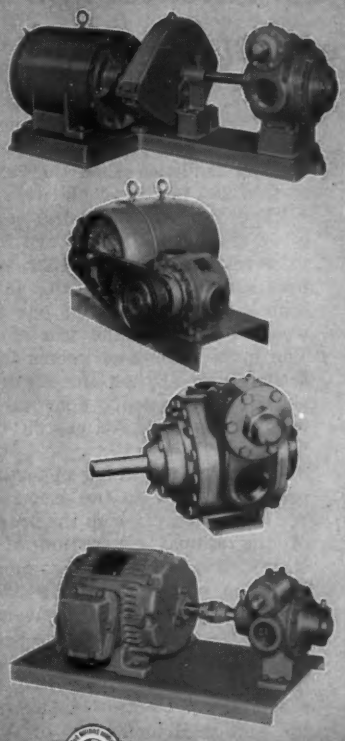
Under the Treasury Department proposal, these paper refunds would have to be redeemed in cash by the co-op within three years. If not, the co-op would pay taxes on the funds they represent.

If they were redeemed, the present single tax against the patron would apply to the funds involved.

Even if the legislation does pass, the co-op will be able to use profits for cutting prices and some modernization or expansion and still escape most of the taxes which normal business firms must pay.

Profit...

EVERY STEP OF THE WAY!



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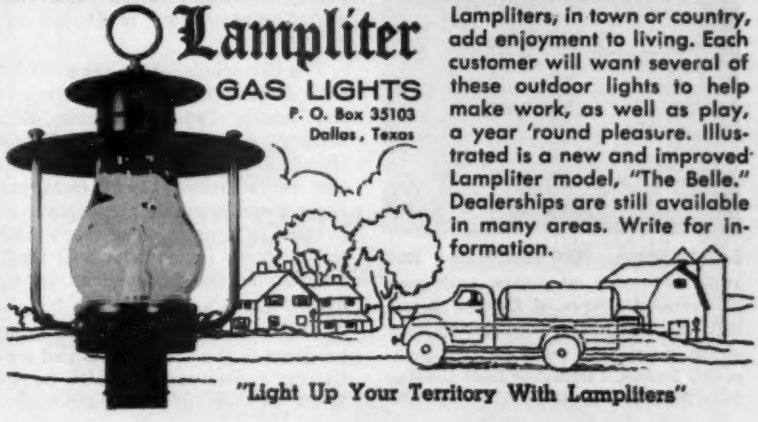

Lampliters, in town or country, add enjoyment to living. Each customer will want several of these outdoor lights to help make work, as well as play, a year 'round pleasure. Illustrated is a new and improved Lampliter model, "The Belle." Dealerships are still available in many areas. Write for information.

"Light Up Your Territory With Lampliters"

BPN ASSOCIATIONS

South Carolina LPGA advances with five-point educational program

FROM August 16 to 18, members of the South Carolina and Georgia LPG Assns. will get together in the General Oglethorpe Hotel in Savannah for a rather unusual convention program. Of a highly educational nature, this program typifies the importance placed on education by South Carolina LPGA.

Exactly half of the three-day session will be devoted to a seminar on profit. The seminar will be conducted by Everett R. Bollinger, Jr., assistant professor at the School of Industrial Management at Georgia Tech.

In the words of S.C.L.P.G.A. President T. E. "Tommy" Thornhill, "The Education Committee has been the most active committee in our association.

"We realized that we have been sitting back gloating over our success while electricity went to work spending millions of dollars and many hours of thought to combat our success. They found a way and have done a good job over the past ten to twenty years. We even find that schools and churches in our state are putting in electric cooking facilities when they expect to feed 200 to 300 people!

"The Education Committee was given the job four years ago to try to develop a program that would promote the use of LPG in our schools, so the youth of our state would be taught the use of gas. The home economics rooms in the schools were at that time filled with electric equipment and all we wanted was to have gas in there for a comparison.

"In July, 1955, a big opportunity presented itself to the association. We obtained a place on the program of the annual convention of the state's economics teachers. Our association played it up big around the state prior to the convention. At the convention, we gave a demonstration, presented favors to the teachers, and awarded two $250 scholarships to two members of the Junior Homemakers of America. The teachers still talk about that program today, four years later."

The pair of $250 scholarships have been given every year since and are now one of the bulwarks of the group's five-point educational program.

Accomplished on a yearly Education and Promotion budget of $3,000, the program is financed on a purely voluntary basis. The suggested contribution is $1 per car of gas.

The two scholarships are awarded each June with the cooperation of the South Carolina Home Economics Assn. With 270 Junior Homemakers' chapters in the state and an estimated 14,000 members, the association feels "it is very important to keep in close touch with these young ladies who will teach or will be the housewives of tomorrow."

Another phase of the five point program is the installation and continuing replacement of LPG equipment in one of the homemaker laboratory apartments at Winthrop College, Rock Hill. A substantial number of teachers are trained at this school. They live in the apartment for two weeks each year to keep house on a competitive basis. The equipment is maintained by a local LPG dealer. Four hundred dollars is set aside each year to buy new equipment.

Most expensive item in the education budget is the $1200 reserved for demonstrations before various groups. The first three demonstrations under the current program were held in March in Greeleyville, Hemingway, and Kinkstree. Each has a population of around 15,000. The events were advertised via newspapers, radio, direct mail and hand bills. Door prizes were offered with a grand prize of a gas dryer. A demonstration was held in June at the annual meeting and training session of the Home Economics Teachers at Winthrop College. Another was planned for July before Negro Home Economics Teachers Summer Conference at South Carolina State College, Orangeburg. As this program proceeds, the association expects to hire a home economist to handle all of its demonstrations.

The remaining two facets of the group's educational program are a pair of exhibits. The Clemson Home and Farm Week is a 200-exhibit, 400-lecture-and-demonstration affair that takes over the Clemson College campus at Clemson each August. The second exhibit is at the South Carolina Home Economics Assn. annual convention, to which a limited number of exhibitors are invited. Georgia LPGA "makes every effort to get on the invitation list." Annually budgeted for these exhibits are $600 for the Clemson display and $300 for the Home Economics Association exhibit.

Thus, for a grand total of $3000, South Carolina LPGA has an educational program that proceeds on five different fronts.

South Carolina LPGA awards two $250 young homemaker scholarships each year. Here Fred Matthews of Carolina Butane Gas Co., Orangeburg, represents the association in presenting one of the 1959 grants to Lois Bradley, a student at South Carolina State College, Orangeburg.

Utilities and LPG dealers form Virginia Council

The natural gas and L. P. gas industries of the State of Virginia have formed the Virginia Gas Council.

The purposes of the Council are to promote and develop the sale and use of natural and L. P. gas throughout Virginia and to develop closer working relationships between members of the

Council to increase the effectiveness and unification of gas activities.

For the past three years the natural gas companies and the Virginia LPGA have jointly sponsored gas displays at home economics and restaurant conventions. Also, the natural gas companies have been active in the Mrs. America promotion.

With the formation of the Council, continuity, group responsibility, and budgeted funds have been provided for.

Near-term projects under consideration by the Council are: continuation and broadening of present display programs at statewide conventions and meetings; improvement of exhibits and "give-aways" at exhibits; and more individual selling of representatives at conventions through better booth-manning.

Montana, Wyoming meet attended by 100

Some 100 delegates from the Montana LPGA and the Wyoming LPGA met May 25-26 in Billings, Mont., for their annual joint convention.

Steve Mickulin of Billings was elected president of the Montana association. Jerry Jasper of Gillette will head the Wyoming group for the coming year.

Other Montana officers include Ralph Bawden of Glendive, vice president; H. E. Gerke of Billings, secretary-treasurer; and Glenn Scheihing of Billings and Gene Adkins of Great Falls, directors.

Fred Schrader of Laramie was elected first vice president for the Wyoming group; Jack Lovelady of Worland, second vice president; Ira Lamb of Lusk, secretary; A. F. Germann of Sheridan, treasurer, and Earl Wade of Newcastle, director.

Kentucky installs LPG lab at the University

An agricultural engineering laboratory, equipped with L. P. gas, is now a fact at the College of Agriculture, University of Kentucky, Lexington. The lab is a reality because of the work of the Kentucky LPGA Agricultural Committee.

It will be used for agricultural engineering tests, as well as in teaching the use of L. P. gas as a source of energy on the farm, according to University officials.

Culminating a number of years of cooperation between the University and Kentucky LPGA, the lab was planned under the supervision of: Agricultural Committee Co-chairman Paul Bauer, Big 3 Gas Co., and C. Wayne Doran, Kengas Inc.; Association Agricultural Committee Chairman Charles Killinder, Phillips Petroleum Co.; and G. Howard Yandell, chief L. P. Gas Inspector, Department of Public Safety.

Frances L. Holliday, secretary, was co-ordinator.

Many LPG firms and manufacturing companies contributed equipment and labor and time to help make the lab a success.

Mo-Ill group receives plenty of publicity

Men from both sides of the Mississippi met June 8-10 in St. Louis, Mo., for the Mo-Ill LP-Gas Exposition convention and trade show.

The Missouri group elected a

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R. E. Rasmuson, outgoing president of the Missouri LPGA (left), congratulates Roy Burkholder as he hands over the gavel for the 1959-1960 term.

slate of new officers. They are: Roy R. Burkholder, owner and manager, Burkholder's Appliance, Sedalia, president; Orval Ricks, owner and manager, Ricks Store, Winfield, vice president; and Wayne Werges, owner and manager, Elsberry Gas Co., Elsberry, treasurer.

The Illinois group did not elect officers at this meeting.

The 675 registrants had an opportunity to view new products in the 61 booths which comprised the trade show.

Both associations are to be commended for the publicity they received in the *St. Louis Post-Dispatch*. In its Sunday edition, the paper carried 26 advertisements from firms welcoming the group. A first-page story, in one section, a feature on another page, and two pictures told about the convention and answered in detail the question: "What's LPG?"

Conventioneers saw a most unusual demonstration when Michael Spatz, president of Spatz Paint Industries, Inc., arranged to have a bulk tank painted during the meeting. A man who had never before painted a tank did the job in 11 minutes, as shown in a story in the feature section of this issue.

Alabama LPGA is correcting county tax

The Alabama LPGA Legislative committee, headed by Fred Palmer, met in Montgomery in May in an attempt to get relief on a county tax put on the books in error in 1956.

LPG consumers in Blount County are being penalized with a 1 cent per gal. county tax earmarked for the improvement of county bridges and roads.

The original intent of the bill was to cover only fuels used in motor vehicles. However, the way the law is worded, the tax applies on motor fuels for any use. L. P. gas used for heating and cooking in Blount County is considered a taxable motor fuel.

As a result of the meeting, dealers and customers of the county have been assured that a new bill correcting this situation will be introduced in the next regular session.

Management workshop studies public relations

A "Public Relations for the Butane Dealer" course was the highlight of the Texas Butane Dealers Association's 14th Annual Management Workshop. Instructor for the course was Jule Thomas of the University of Texas Division of Extension.

A total of 39 LPG dealers attended the four-day school, which is set up on a five-year basis with first-year students as freshmen, second-year students as sophomores, and the third-year students as juniors. Seniors (fourth-year students) graduate, but may return in succeeding years for post graduate study as graduate students.

National Council makes two appointments

The appointment of Don Barton, sales manager of Skelgas division, Skelly Oil Co., as advertising committee chairman of the National LP-Gas Council, has been announced.

He succeeds Donald G. O'Meara, sales manager of Pyrofax Gas Corp., who held the position for two-and-one-half years.

Barton moves into the job with over 30 years' experience in the industry. Since 1929, he has been with Skelly.

Also announced is the appointment of Richard H. Green to the public relations staff of the Council. Before joining the Council Green worked on *Concrete Products* magazine, and *Printer's Ink*, weekly magazine of advertising, marketing and selling.

Mississippi dealers hold 2nd annual safety meet

The sixth and last of a series of safety conferences sponsored by the Mississippi L. P. Gas Dealers Association was held on June 5 in Hattiesburg, Miss.

Attending were 80 drivers and installers from L. P. gas firms in 17 southern Mississippi counties.

The second annual safety conference series was conducted in cooperation with the University of Mississippi.

Three films, a talk, and two demonstrations featured the day-long session.

Other conferences were held earlier at Oxford, Indianola, Starkville, Jackson and McComb.

Frank, past president MLPGA, died on May 9

Manford R. Frank, who served as president of the Michigan LPGA in 1956, passed away at his home in Adrian, Mich., on May 9.

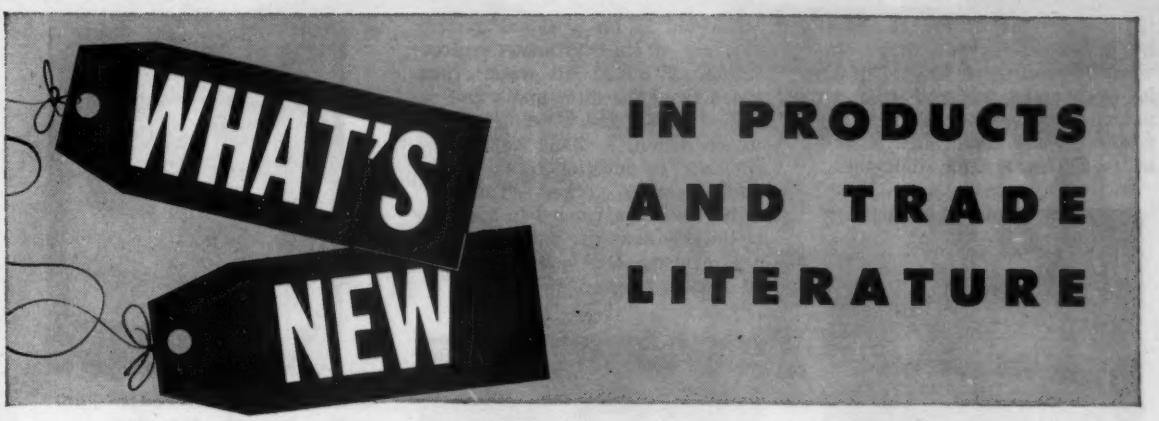
Frank has been active in the bottled gas business in Adrian and operated the Adrian LPG & Appliance Co. with bulk plants at Adrian and Belleville.

Association Notes

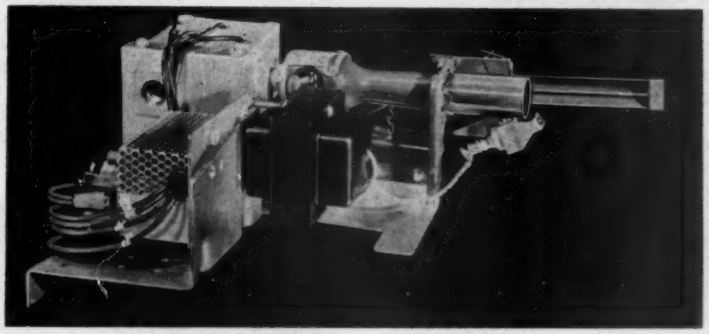
The Butane-Propane Institute of Louisiana, during its convention in June, named I. W. Patterson, Baton Rouge, president. Others elected included W. A. Keller, Bunkie, vice president; W. C. Bogan, Denham Springs, treasurer; and J. C. Chenevert, Jr., Alexandria, secretary.

New officers of the Arkansas LPGA, elected at the close of its annual convention, are Ray Martin, Rison, president; W. A. Barnard, North Little Rock, and Dick Baker, Bentonville, vice presidents; O. L. Dailey, Jr., Little Rock, executive secretary; and W. O. Childress, Hot Springs, treasurer.

Jim Deupree, Alabama LPGA executive secretary, has submitted his resignation to the board of directors, but will not leave the association until a successor has been chosen and trained. He has no definite future plans.



For further information on items reviewed in this section use the convenient post-paid Readers' Service Cards on pages 89, 90



Automatic direct spark ignition system developed for gas-fired clothes dryer

Circle 1 on Readers' Service Card

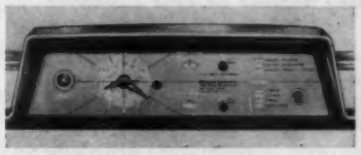
The AGA's recent action approving new requirements for gas clothes dryers permits use of an automatic direct spark ignition system developed by Controls Co.

According to D. M. Strathearn, vice president and director of appliance and automotive controls sales, this action opens the door for a wide range of other potential applications.

The ignition system is designed to eliminate a major service problem in clothes dryers—that of substantial pilot burner trouble. Conventional automatic ignition systems utilize a glow coil or "hot wire" to ignite the pilot flame, in turn igniting the main gas burner. Utility company surveys show that this is responsible for a disproportionate share of clothes dryer service calls.

The Controls Co. system provides for the direct ignition of the main burner gas by an intense spark, eliminating the conventional pilot and glow coil ignition completely.

"We have also already done considerable, successful development work in applying our new ignition system to reflector-type overhead heaters that are subject to malfunction arising from large movements of air about the heater," Strathearn stated. "Our system is suitable since it is not affected by drafts."



Control calculates length of time needed for cooking

Circle 2 on Readers' Service Card

New feature of the 1960 Magic Chef gas range line is the Magic Control Center. With Dial-a-Magic oven control, all the homemaker must do is set the "Stop Time" dial to the time she wants the roast to be cooked and ready and turn the "Time to Cook" dial until weight of meat to be cooked appears in the window opposite the type of meat to be cooked. She can even specify that beef be cooked rare, medium or well-done. Set oven thermostat at 300 deg. The Center will then take over, start the oven automatically, roast the meat, and turn off at the time specified for the roast to be ready.

Roller will paint all sides of pipe at one time

Circle 3 on Readers' Service Card

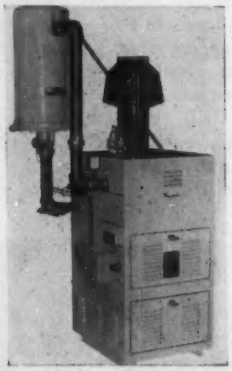
Speedway Paint announces a roller that paints all sides of a pipe, rod, or cable at one time and

in one quarter of the time ordinarily taken for this type paint work. Presently a line of rollers is being manufactured that will paint pipes, square and twisted rod, cable and chain, etc., from ½ in. to 2½ in. outside diameter.

Manifold designed to hold any number of LPG cylinders

Circle 4 on Readers' Service Card

A manifold being sold by Linde, which is designed to hold any number of propane cylinders, puts older heavy type cylinders, as well as new lightweight cylinders to work, thereby eliminating more costly types of bulk installations. It offers a choice of propane capacities ranging from 200 to 2000 lb or more. Only one man is required to install the unit. Dual extension units can be added or removed without taking the manifold out of service or interrupting the continuity of supply. It complies with all requirements of NBFU Pamphlet No. 58.



Swimming pool heater carries 20-year guarantee

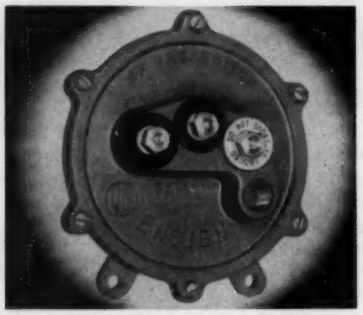
Circle 5 on Readers' Service Card

Raypak announces the addition of the "Lifelong" indirect swimming pool heater to its line. It is guaranteed for 20 years. The Raypak boiler to which the heater is connected is on a closed system. Because of its continuous recirculation of initial fill water (provided from the filter pump and retained within the boiler), there is no corrosion, scaling, electrolysis, or rust. In addition to swimming pool heating, other "Lifelong" units may be arranged in a cluster to provide domestic hot water, central heating, and snow melting—all from a single boiler.

Revco protects asphalt and black top surfaces

Circle 6 on Readers' Service Card

Revere Chemical's Revco pavement sealer is said to lengthen the life of asphalt and black top surfaces at 1/10 the replacement cost. Surfaces subjected to petroleum products, when coated with Revco, are prevented from deteriorating. It penetrates and gives air-tight coverage. It also prevents cracking resulting from moisture penetration and subsequent freezing.



Vacuum shut-off switch triggers electrical devices

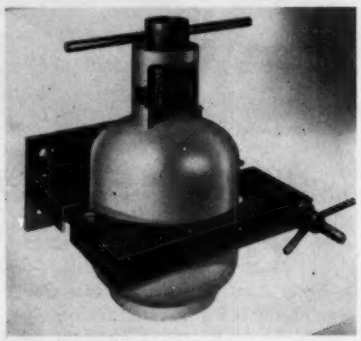
Circle 7 on Readers' Service Card

A shut-off switch, adaptable to any make of L. P. gas carburetion, utilizes vacuum to trigger an electric solenoid shut-off valve or other electrical devices. Ensign's Model "SF" is sensitive in operation to vacuum as low as 1.5 to 2 in. of wc. The switch carries a rating of 3 amperes at 30 volts. Inquiries regarding its uses for other than automotive applications are invited.

Brown introduces Featuramic styling for complete line

Circle 8 on Readers' Service Card

Brown Stove has introduced Featuramic styling in its complete line of 36, 30, and 20 in. ranges. Featuramic is the styling first shown in the company's 36 in. ranges, and now carried into the full line for 1959. The 36 and 30 in. ranges are highlighted by the "Touch O' Gold" pedestal-type backguard with fluorescent lighting. The 20 in. apartment size features indirect lighting behind a decorative glass panel. Electric clock and 4-hour timer are standard.



Valve wrench eliminates removal of handles

Circle 9 on Readers' Service Card

An LPG cylinder valve wrench, announced by Adams Bros., eliminates the removal of valve handles when servicing. It provides a quick, easy way to remove and replace recessed L. P. gas cylinder valves. An adjustable cylinder vise is a companion item.

Furnaces can be equipped for summer cooling

Circle 10 on Readers' Service Card

"My" series furnaces, available for all types of gas, have been introduced by Stewart-Warner. Units are factory assembled and

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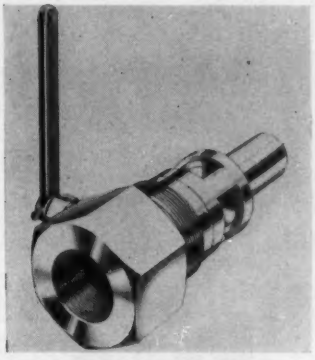
are available in counterflow, upflow, basement, and horizontal models. Capacity is AGA-rated at 105,000 Btu per hour input. The series can be equipped for immediate or future summer cooling.

Vertical broiler sears both sides of food at once

Circle 11 on Readers' Service Card

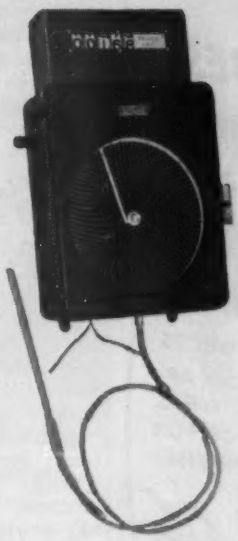
Norge's gas range will broil meat, fowl, seafood, and other foods vertically. Vertical broiling sears both sides at once, thereby sealing in juices. A built-in griddle may be used as a "fifth burner." Other features include automatic rotisserie, meal sentry burners, two-in-one center-simmer burners, and automatic ignition for complete matchless performance. In addition to the vertical broiler, a fully adjustable regular broiler with pull-out drop-front is located beneath the oven.



Internal safety control valve designed for LPG trucks

Circle 12 on Readers' Service Card

Fisher is producing an internal safety control valve, the C154. This lever-operated, quick-closing internal type shut-off valve was designed for use in L. P. gas delivery and transport trucks. The unit will function as an automatic back pressure check valve in the closed position, and will provide quick-



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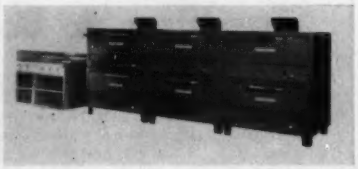
closing shut-off and excess flow check protection in the open position. The valve inlet was designed for installation in a 3 in. NPT half coupling.

Decals designed specifically for LPG dealers available

Circle 13 on Readers' Service Card

Wetmore & Co. has developed a marking system of permanent decals specifically for LPG dealers. Decals include an all-purpose emblem, which comes with standard "Better Service" headline, and the dealer's company name and city imprinted; and a bumper promotional emblem. Decals with the words, "Flammable," "Propane," "Butane," "L. P. Gas," "No Smoking or Open Flames Within 50 Feet." "No Smoking," and "Danger" are also available. A catalog, giving dimensions and price of each of these signs plus many others, is available upon request.



New ovens feature decks 42 in. wide x 32 in. deep

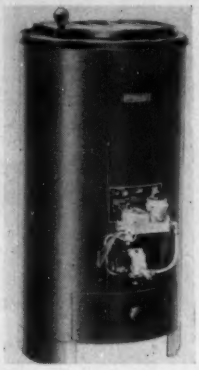
Circle 14 on Readers' Service Card

South Bend has introduced a line of three bake ovens, each of two-pan size. Each deck is 42 in. wide x 32 in. deep inside. One model has 7 in. high deck, another has 12 in. and the third is a twin deck unit, each being 7 in. high inside. Noteworthy is a tempering zone or preheating area underneath the main oven burner combustion chamber. Air is brought into this preheating zone and the temperature raised to 67 per cent of the required baking level before the air comes into the burner.

Burkay pool heater designed for 30,000 gal. capacity

Circle 15 on Readers' Service Card

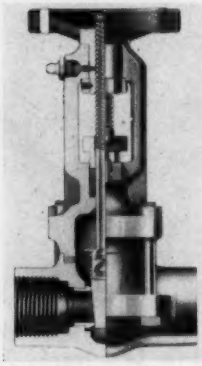
Permaglas has added the 30F to its swimming pool heater line. It is designed for pools of approximately 30,000 gal. capacity. Rated at 300,000 Btu per hour, it is fully automatic, featuring the Burkay flow switch. When the filter pump turns on and begins to circulate water through the system, the flow switch activates the heater burner. When the water flow subsides, the switch shuts off the burner.



Economy incinerator features firebrick liner

Circle 16 on Readers' Service Card

A low-priced smokeless-odorless gas incinerator has been introduced by the Majestic Co. Model ESO employs a thick, corrugated firebrick combustion chamber. The presence of air in these corrugations provides an extra layer of insulation to allow cooler casing temperatures during operation. The after-burner principle, is carried out by a radiant ceramic flue liner, which, when heated to glowing temperature, consumes smoke and odor. Capacity of the unit is 1.5 bu.



Ductile iron gate valves available in ½ to 2 in.

Circle 17 on Readers' Service Card

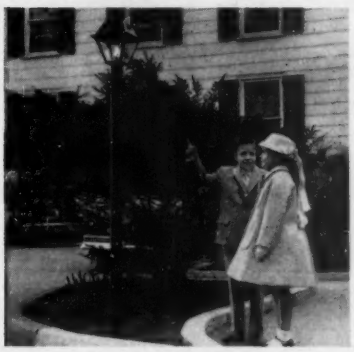
Ohio Injector announces a line of ductile iron gate valves in sizes ½ to 2 in. "Pipe-pal" is rated at 1000 psi for all temperatures from 20 to 650 deg. F. It is described as having "a spread flange design which embodies longer bolts that

store extra bolting energy to prevent joint loosening. Ductile iron's strength as well as its excellent thermal shock and impact resistance render it ideally suited for refinery and process lines."

Self-contained temperature regulator now available

Circle 18 on Readers' Service Card

Barber-Colman's temperature regulator for proportional control of water, gas, or low pressure steam is designed for all applications where a self-contained valve assembly may be particularly suited. A tight-closing, self-contained unit, it features: a calibrated adjusting dial for precise temperature control, electric industrial motor operator, and armored capillary tubing.



Outdoor gas lamp features indoor control unit

Circle 19 on Readers' Service Card

A gas-fired outdoor lamp with a remote control unit for installation inside the house, is introduced by Trageser. The "Vari-Ray" burns only when turned up by the householder. A pilot-light burns continuously day and night, and a simple remote control unit, which can be installed just inside the front door, permits the lamp to be turned up when night falls and turned off when the householder retires for the night. Intensity of illumination can be varied.

Orifice unions help measure and control flow of gases

Circle 20 on Readers' Service Card

A line of forged-carbon-steel, beveled-orifice unions designed to join sections of pipe and at the same time help measure and control the flow of liquids or gases under pressure has been announced by Clayton Mark. The company also has a stainless steel orifice plate shaped to fit the contour of the union seat and eliminate gaskets. It snaps into place automatically.

Complete campers kit includes stove and lantern

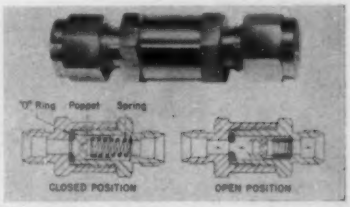
Circle 21 on Readers' Service Card

Rexo-Therm has introduced the Sievert complete camper's kit. Included are: 2-burner stove, lantern (with base and hanging hook), heater, 2 lengths (1—5 ft, 1—10 ft) high pressure hose, and 2-way adapter (9/16 LH thread). The unit fits all standard L. P. gas containers. Both burner stove and lantern can be used at the same time. Other Sievert equipment available includes: portable windproof camp stoves, 2-burner stoves, heaters, lanterns, and lantern and tank assemblies.

Gaugeless regulator

Circle 22 on Readers' Service Card

An improved version of its gaugeless regulator for all cylinder regulator applications has been developed by Harris Calorific Co. It is designed to reduce maintenance cost otherwise brought about by broken gauges, inlet stems, adjusting screws, ruptured diaphragms, and leaking seats. Available for all commercial gases in several models delivering 0-15 lb., 0-50 lb., 0-100 lb.



Poppet check valve controls flow in either direction

Circle 23 on Readers' Service Card

A poppet check valve adaptable for use with a wide range of pressures is announced by Nuclear Products. Major application is on

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instrument, process and control lines to allow flow in one direction instantly and automatically stop flow in a reverse direction.

Incinerator can be installed either indoors or out

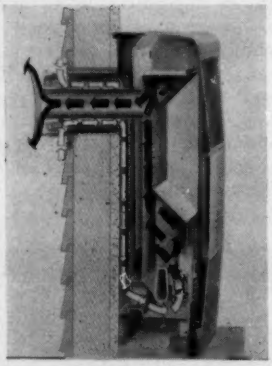
Circle 24 on Readers' Service Card

Caloric announces a gas incinerator which can be used for either indoor or outdoor installation. Designated Model No. 21, the disposer is available in "Caloric Bronze" finish and features a special safety-locking device on the top door, accurate-control time setting which can be varied depending on the material to be incinerated, and specially-designed burner and pilot assembly.

Whirlpool adds five ranges to its 1959 line

Circle 25 on Readers' Service Card

A "Gold Star" deluxe 30 in. model, a 36 in. custom unit and three built-in gas ovens are mid-year additions to the complete line of RCA Whirlpool gas ranges. All three built-in ovens have matchless "Balanced-Heat" ovens; waist-high "smokeless" broilers, and eye level control panels. Each is designed for inside or outside venting.



Vent is adjustable to any exterior wall thickness

Circle 26 on Readers' Service Card

Tele-Vent, a pre-assembled thru-the-wall vent, is now instantly adjustable to any exterior wall thickness. No cutting is needed. Safti-Vent installation requires one measurement—from cabinet base to center of vent. At this point, a 7¼ in. hole is cut through the wall. No template is needed. The pre-assembled vent is inserted and telescoped to wall thickness. Hooking up the gas line completes the installation.

Restaurant range features 30-in.-wide oven

Circle 27 on Readers' Service Card

A restaurant range, with infrared broiling and an oven 30 in. wide, 22 in. deep and 4¼ in. high,

Elgin's NEW Model 50
Fully Automatic Water Conditioner

A NATURAL FOR YOUR MARKET

For soft, rust-free, filtered water — Automagically!

A *complete* city and well water conditioner, Elgin's *new* Cabinet Model 50 softens water, removes rust and filters for sparkling clarity in one *automatic* operation.

The Model 50 is easy to install and requires minimum maintenance and salt attention. A "most wanted" appliance, easily sold on its looks and performance in city and rural areas alike, it is a natural tie-in with home improvement plans.

Elgin also produces a sales-mate for the Model 50 — the economical, semi-automatic Model 60 tank-type unit. A 3-year guarantee, plus a 10-year warranty, is furnished on both units. And Elgin provides you — the dealer — with sales stimulating merchandising aids and demonstrators to make your selling job easier and more professional.

Semi-Automatic Model 60

Fully Automatic Model 50

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Home Appliance Division

ELGIN SOFTENER CORPORATION

243 N. Grove St., Elgin, Illinois

RAYPAK TRI-TEMP SYSTEM

THE PACKAGE HOT WATER SYSTEM
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Provides water at **200°** *for space heating,*
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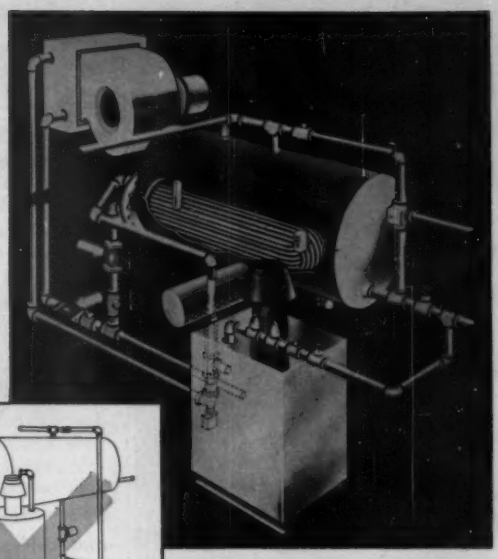
140° *for general purpose*

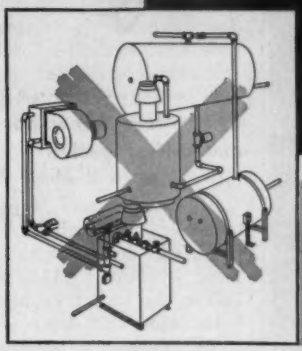
from a single **RAYPAK** *gas fired boiler*



Saves up to 40% in original equipment and installation costs – slashes maintenance expense – a superior indirect system – Raypak boiler guaranteed for 20 years.

As only one boiler, one vent and one gas line are required there are important savings in equipment and installation costs. The Tri-Temp System saves a great deal of space, an important factor in the food serving business. The Raypak Tri-Temp System is available in a wide range of sizes and capacities.

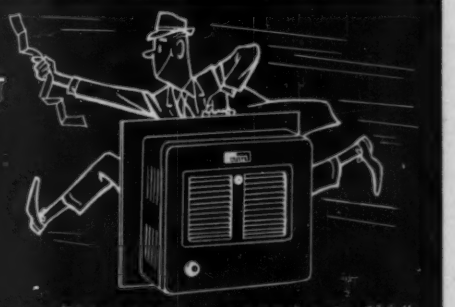
The Raypak Dual-Temp System is identical to the Tri-Temp System and is available for installations where there already exists central heating.



In the old style system a much larger storage tank wastes space and doubles cost. The obsolete method directly heats raw main water with resultant scaling and corrosion, with extremely high maintenance and replacement expense on the water heater and high temperature booster.

Raypak **COMPANY, INC.**
® Engineers-Manufacturers · 2416 CHICO AVENUE, EL MONTE, CALIFORNIA

GET ON THE PROFIT TRAIN
with SUBURBAN NOVENT and DYNAVENT GAS HEATERS



Biggest Selling "Sealed Combustion Chamber" Heaters On The Market . . . YOUR BEST PROFIT MAKERS

And no wonder these sensational heaters are the sales leaders. NO other heater offers ALL these outstanding features . . .

- Fully vented without flue or chimney
- Easily installed in *both* windows and walls
- SAVE UP TO 30% ON FUEL COSTS — no high bill complaints
- Sealed combustion chamber — burn no room air
- Efficient, forced warm-air circulation heats floors — draws air from ceiling for reheating —no heat stratification
- Take up no floor space — extend only 8½" into room
- Completely automatic, with built-in or wall thermostats
- Easy to service — entire unit quickly removed from cabinet
- One heater can heat up to 3 rooms — two heaters can heat entire small 5 room house — *true zone control heating*

Available in three sizes — 20,000 BTU — 35,000 BTU — 45,000 BTU • Approved by AGA, CGA, CSA, Leading Utilities and LP-Gas Marketers • Nationally advertised in leading consumer magazines

For complete details write to
SUBURBAN APPLIANCE CO.
Dept. BP 859, Morristown, N. J.

ARMSTRONG
GAS HEATER

12,000 BTU Vented Circulator

Perfect for the small room. Ultra-modern appearance added to tested performance makes this a must for dealers. Finished in durable baked-on tan enamel. The attractive expanded metal front assures rapid distribution of heat. Can be installed close to wall. Has optional horizontal and vertical vent openings with internal draft diverter. Available with manual or 100% safety pilot and automatic temperature controls.

MODEL 9120 is AGA Approved for use with any gas. 17½" high, 15" wide, 11" deep.

WHEN IT'S AN ARMSTRONG DEPEND ON IT IT'S THE BEST OF ITS KIND

Write for Literature and Prices on 60 Armstrong models and sizes

Armstrong Products Corp.
Dept. BP, Huntington 12, W. Va.

for leakproof, pressure-tight connections

use TiteSeal®

SEALING COMPOUNDS

Heat and vibration-proof, non-solvent, will not shrink, crack or crumble. Makes all assemblies leak-proof and pressure-tight. Prevents rust, corrosion, joint seizure.

7 BASIC BLENDS

LIQUID WRENCH
The super-penetrating rust solvent

LOOSENS
rusted bolts, nuts, screws, 'frozen' parts

Liquid Wrench works *fast*... yet is absolutely safe for all metals and alloys.

2171

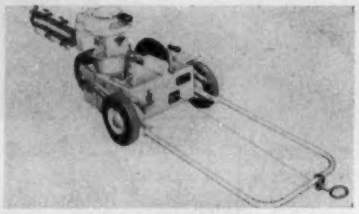
At Industrial, Automotive, Hardware, Plumbing Jobbers

SOLDER SEAL

RADIATOR SPECIALTY CO.

For further information use Readers' Service Cards on pages 89, 90

has been introduced by Comstock-Castle. Model A330B is a single-oven-type with side broiler and griddle. The broiler is an oval-type burner set below frames of steel mesh which produces an even heating infra-red broiling surface.



Utility trencher is portable and self-propelled

Circle 28 on Readers' Service Card

A portable, self-propelled utility trencher, is especially designed for L. P. gas dealers who install complete systems. Manufactured by Davis, the unit trenches from 2 to 3 in. wide and down to depths of 3 ft. It has a positive, variable speed drive with a winching mechanism that draws it along the line to be dug. Six different speed settings, as well as a neutral and stop-forward motion, are controlled by a single lever. Speeds are up to 400 ft per hour.

TRADE LITERATURE

"Plan for a Growing Market"

Circle 29 on Readers' Service Card

"Planning for a Growing Market," a 34-page booklet, is one of Cities Service's new seven-volume "Distributor Management Series." Seven comprehensive chapters show readers how to spot future opportunities and how to build and carry through a profitable growth program.

Self-sticking safety signs

Circle 30 on Readers' Service Card

Over 400 stock self-sticking accident prevention signs are described in an 8-page illustrated catalog offered by W. H. Brady. The signs available cover any safety or plant housekeeping situation. All signs conform to ASA and NSC specifications for design, color, wording, and size. Special signs can be made up to customer order.

"Code for Defensive Driving"

Circle 31 on Readers' Service Card

To help the millions of professional drivers who must constantly make decisions behind the wheel, the National Safety Council has published a booklet, "A Professional Code for Defensive Driving." "Defensive driving," the Council points out, "is a formula for avoiding accidents. It is a state of mind. It is the professional driver's safety code of the road." A sample copy is available at no cost.

L. P. gas fuel systems catalog

Circle 32 on Readers' Service Card

An 84-page Century Gas Equipment catalog of original equipment and conversion L. P. gas fuel systems for trucks, buses, taxis, and farm and industrial vehicles and engines is now available. It lists all parts and prices of 13 converters, 13 filters, 3 regulators and 131 carburetors. Engine specifications and installation data are included.

Truck drivers' signals

Circle 33 on Readers' Service Card

Truck drivers, when constantly blinking the lights on their trucks, are practicing a code of ethics, courtesy and safety. A public service folder, called "Travel-Pal" by Air-Com Publishers, incorporates the truck drivers' signals. Also, space for trip expenses is included. Firms desiring to distribute these folders may secure further information.

Robertshaw's magazine

Circle 34 on Readers' Service Card

The first issue of a new magazine devoted to news and features on the gas and controls industries has been published by Robertshaw Thermostat. The magazine, called "The Control Tower," will be published quarterly. Art work and photographs are in full color.

Gas valves folder

Circle 35 on Readers' Service Card

"For Perfection in an Absolutely Silent Gas Valve," a folder released by White-Rodgers, lists the types of valves available, describing the job each was designed to do. Features of the line are given in the color folder, along with general specifications, including electrical ratings and sizes available.

BPN THE TRADE

KEITH G. BLANCHARD has been elected vice president of Tuloma Gas Products Co. Before coming to Tuloma, he was a Standard Oil Co. (Indiana) district manager. He had been with that company for 29 years.

K. G. Blanchard
Tuloma Gas

Phil Sasser
Armstrong

PHIL SASSER has been appointed vice president and assistant general manager of Armstrong Products Corp. For the past three years he was president of General Mining & Construction Corp. and prior to that, president of Sasser Publications Inc.

Appointment of ANDREW B. PULLIAM as president and general manager of the Marvel-Schebler Products division of Borg-Warner Corp. is announced. He succeeds R. C. INGERSOLL who is relinquishing his divisional duties to devote more time to company-wide responsibilities.

WILLIAM M. HAILE has been elected a vice president of Union Carbide Corp. He will supervise the activities of Linde Co., National Carbon Co., and Union Carbide Metals Co. WILLIAM B. NICHOLSON has been appointed president of Linde to succeed Haile. Both men have long been associated with the company—Haile since 1925 and Nicholson since 1935. The Speedway Products department has also announced that T. W. ESELGROTH, midwestern region manager, will expand his territory to include several western and southwestern states incuding Colorado, Wyoming, Texas, and New Mexico. Chicago area salesman G. W. MAUPIN will move to Kansas City as salesman-in-charge of the southwest and western states. Replacing Maupin in Chicago is D. L. WILSON. B. C. WROBEL'S territory will be enlarged to include most of Ohio and T. T. WHITE will add southern Illinois and western Missouri. V. M. PARKER will now handle Nebraska, Wyoming and Iowa and D. A. DIXON will be salesman-in-charge of Pacific Coast territory with office in Los Angeles.

W. RICHARD BLEICHNER has been named advertising manager of Rockwell Manufacturing Co.'s Meter-and-Valve and Petroleum-and-Industrial divisions. He joined the company in 1952 and was promoted to his most recent position as assistant advertising manager, Meter and Valve division in 1957. PAUL A. WICK, assistant to the president and assistant secretary, has been elected secretary of the company. He joined Rockwell's legal department in 1946.

W. R. Bleichner
Rockwell

K. J. Worthen
General Electric

KENT J. WORTHEN has been appointed national sales manager for General Electric two-way radio. From Lynchburg, Va., he will direct the sales activities of 60 district offices throughout the nation. He joined G-E in 1949. L. R. SHEELEY, formerly manager of mobile radio equipment sales, has been named national sales manager for the Computer department in Phoenix, Ariz. ROBERT L. CASSELBERRY is now acting manager of the technical products operation of the Communication Products department. The Communication Products department has moved its five-state southeastern regional two-way radio sales office from Atlanta, Ga., to Tallahassee, Fla. J. W. BRYANT, previously regional manager at Atlanta, will be in charge of the new office. M. G. MCRAE, northern Florida district mobile radio sales manager, will have an office in the new location.

Dig Ditches at Lowest Cost

ARPS TRENCH DEVILS

Cost Less to Own and Operate

Model JR

★ Versatile — Digs 2¼" wide trench up to 20" deep
★ Fast — Ditches 6' per minute at 20" depth
★ Simple — One-man operation
★ Portable — Easily loaded on pickup

You can eliminate the slow, costly, hand labor of digging L.P. Gas lines with the new, low cost Arps Model JR Trench Devil. This handy tool increases production while cutting operating expenses — digs 100' of trench for about 12 cents! The simple mechanism keeps maintenance costs low — lightweight, rugged construction assures years of profitable use. Unique curb attachment available for easy digging inside a concrete curb.

For larger jobs the self-propelled Model M-A Trench Devil digs trenches 2¾", 3½", 4", 6" or 8" wide, up to 6' deep. Has smooth, hydraulic drive for speeds up to 1200' per hour.

Send for more information today on these two new, low cost trenchers from the Arps Corporation, New Holstein, Wis., Dept. BPN.

ARPS CORPORATION NEW HOLSTEIN WISCONSIN

TRENCHERS
HALF-TRACKS
BULLDOZERS
UTILITY BLADES

FROM
SPATZ
A COMPLETE LINE OF PAINT PRODUCTS FOR YOUR "WINTERIZING" PROGRAM ESPECIALLY FOR LP GAS INDUSTRY
Amazing "Rust Stopping" STRONTIUM CHROMATE

- Rust Controller — PENETROL the solvent with "terrific" "wetting action".
- The time-saving roller "Crew-Kit" —for your delivery trucks.
- Sold to You at wholesale prices—write for name of SPATZ representative who serves you.

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Let us send you our guide to better painting.

SPATZ
PAINT INDUSTRIES INC.
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Improved WEED CONTROL BURNERS!

- **BLUE JET (Vapor)**
  Most economical burners yet! Throw flame 8 to 12 feet. Burn up to 30 gals. an hour. "Blow-out-proof" pilot.
  #7—Over 7' long; light weight; lever-operated valve; two hooded orifice nozzles.
  #5—5' long; same as #7 except single hooded orifice nozzle.
  #3—3' long—otherwise same as #5.
- **RED JET (Liquid)**
  For farm, commercial and industrial use. Unconditional 2-year guarantee.
  #30 and 30A—lightest and most durable liquid burner made. Runs on liquid, liquid & vapor, or straight vapor.

Distributors wanted in some areas.

Northwest Fabricators, Inc.
NYSSA, OREGON

GEORGE R. ALLEN, vice president, has been elected to the board of directors, Superior Valve & Fittings Co. He joined the company in 1949 as general sales manager and was named vice president in 1950.

R. M. PARKS is the new advertising manager for Bendix Radio division's Industrial Electronics Products Group. Previously, he was assistant ad manager of the division's Avionics Products Group. Also announced is the appointment of G. L. ALDRICH as distributor/dealer sales administrator for mobile radios.

The promotion of JOHN W. BENSON to assistant national advertising manager, RCA Whirlpool major home appliances, was announced. He has been a member of Whirlpool's sales staff since 1956.

WILLIAM M. HARCUM has been appointed general manager of Robertshaw-Fulton Controls Co.'s eastern research center in Philadelphia. Harcum replaces RALPH V. COLES, who was named general manager, European operations, with offices in London. Also announced is the appointment of GEORGE REVESZ as technical director of the research center. DONALD J. NEARY has been named production manager of the Bridgeport Thermostat division. Joining the company in 1948, he has been assistant production manager since 1953.

Minneapolis-Honeywell Regulator Co. has promoted J. A. DEPUY to central regional manager. He succeeds WESLEY R. MOORE, who is on special assignment as assistant to Honeywell's president. DePuy joined the company in 1936 and has held a variety of sales and service posts.

American Meter Co. Inc. has named ALBERT L. WELDY sales representative for the Birmingham sales district. He will make his headquarters in Pompano Beach, Fla. Weldy has 19 years' experience with the company.

JAMES B. PASCHAL has been appointed quality control manager of Cribben & Sexton Co. He will head the department responsible for inspection and control of all of the company's products, in both the domestic and institutional lines.

HARRY W. BEILHART has been appointed a district sales representative of Texaco's L. P. gas sales division. He will headquarter at the district sales office at Westville, N. J., and will cover a large portion of the Eastern Seaboard territory.

Arkla Air Conditioning Corp. announces the appointment of CHARLEY LOCKHART as associate for water chiller equipment in the state of Texas. He formerly held various positions with Lone Star Gas Co., including manager of dealer sales.

Walworth Co. has announced the promotion of LEO E. GARLAND to manager of the firm's Western division. Responsible for the sales and general administration of Walworth's interests in ten entire states and sections of six others, he will headquarter in Chicago.

F. H. MOORE was named sales representative of the Caloric Appliance Corp. for the state of Georgia. He will headquarter at Decatur.

The Dearborn Stove Co. announces the appointment of CHARLES A. MATHISON as its representative in Ohio and Kentucky. He has worked for the Peoples Gas, Light & Coke Co., Minneapolis-Honeywell, and Roberts-Gordon Appliance Corp.

HAROLD H. HIPPLER, formerly general sales manager, truck equipment, becomes assistant director of truck and construction equipment sales for Gar Wood Industries Inc. D. J. BYRD, formerly Load-Packer refuse collection sales manager for the firm, is now general sales manager, truck equipment.

Deaths

ALLEN D. MACLEAN, chief engineer of Superior Meter Co., died of a sudden heart ailment on May 24, in Punxsutawney, Pa. He was the author of many trade journal articles and handbooks. He joined Superior, a subsidiary of Neptune Meter Co., in 1955 as chief products engineer in the company's Brooklyn plant, and moved to the Punxsutawney plant in 1956. Before joining Superior, he was chief products engineer of the Mueller Co.

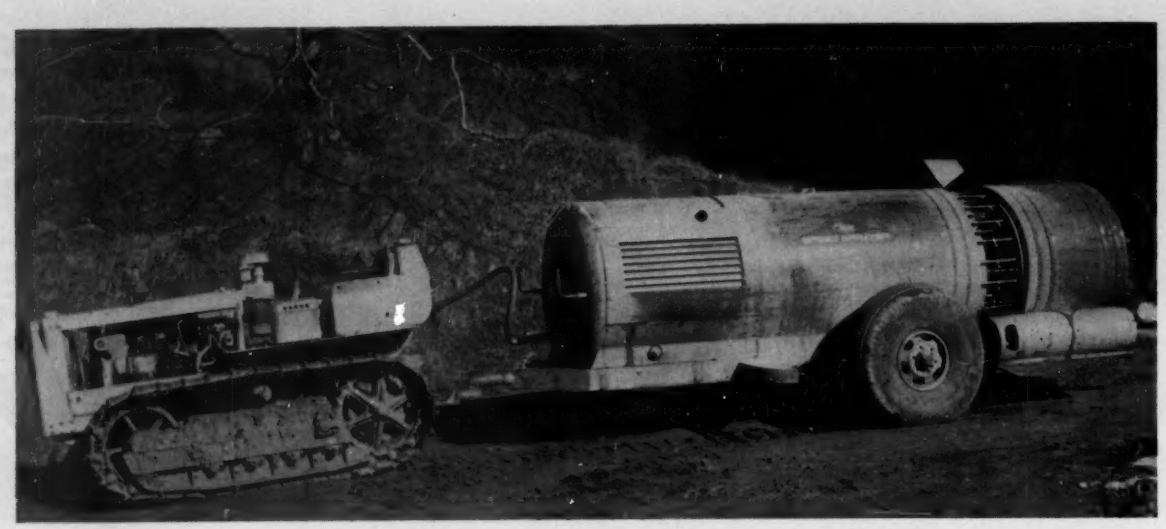
Butane, Propane POWER

CARBURETION • INSTALLATION • SERVICING

Volume apple grower Henry Childs shows the newest of his three large propane-powered orchard sprayers in action. Of the gasoline tractor he says, "You can bet it will be replaced with a propane-powered unit!"

LPG solves many problems around large orchard

Story begins on next page



Another view of Childs' newest sprayer. The unit is 19 ft. 9 in. long, up to 70 in. high (depending on ground clearance adjustment), and weighs 9450 lb when full. Its 188 hp Chrysler V-8 throws out 67,000 cu ft per minute at a velocity of 95 mph.

Sixteen more conversions are on the way

WILLIAM T. HARPER • Eastern Editor

HENRY CHILDS, who owns and operates the 800-acre Crown Orchards near Charlottesville, Va., will be the first one to agree that "an apple a day keeps the doctor away." And, he's almost as quick to say that propane will keep the engine mechanic away.

Childs has gone all out during the past two years in converting his gasoline units to LPG. So far, with the help of Bottled Gas Corp. of Virginia's technicians, he has switched three orchard sprayers, one fork lift and his vast irrigation system to L. P. gas.

"It won't stop there, either," he adds. "As each one of the 16 vehicles I have need to be replaced, you can bet I'll get a propane-powered unit."

The boyish-looking farmer, who was forced to drop out of college to take over the orchards when his father died in 1954, is particularly proud of his three orchard spraying units. Bottled Gas Corp. of Virginia (Richmond) is more than slightly happy with them, too. The units consume about 150 gal. of propane per day when they are in full operation during the spraying season, which runs from mid-March to mid-September.

The newest sprayer, a John Bean Model 500-CP, was purchased only this year. The propane-driven engine, a 188 hp Chrysler V-8, pumps the bug-killing solution through nozzles and powers a huge fan at 2250 rpm to spray the solution at a 67,000 cu ft per minute rate. Using a sprayer such as this, Childs needs only two men (one to drive the tractor-pulled unit and one to fill it with spraying material) to do a job that formerly required 15 men using hand sprayers!

It was when the gasoline engine on one of the two older units went bad that Childs decided to try propane. He had heard of the success a neighboring farmer had using LPG to power a well drilling rig. (In both of these operations, a high-speed, continuous-action engine is utilized.)

"All I really wanted to do by converting to propane was to lengthen engine life. Right now, it's a little too early to accurately compare engine life because I've only used propane for two seasons. But, I can say this: we pulled the engine heads after last season and found no carbon deposits whatsoever. We have to change oil only one-fifth as much as we used to. Now we only do it every 250 operating hours. And, we use only half as many filters. That was an unexpected financial saving. Our propane costs just a little more than gasoline and we get about the same number of hours per gallon. But, we don't have to make as many adjustments on the valves, etc., because they stay more constant due to lessening of lead deposits.

"I'm sure," he continues, "that propane will add a couple of years life to our units. For instance,

there's less wear and tear on the plugs and points. We used to use two sets of plugs a year. This set we have in there now should last us about two years. Multiply that by three units and there's another saving."

W. H. Perkins, Bottled Gas Corp. of Virginia's industrial service manager, did the conversion job. The engines were already set as a 7.5 to 1 compression ratio and little adjustment was needed there. The conversion consisted basically of installing an L. P. gas carburetor. A slight change was made in engine timing to allow for the slower burning characteristics of the new fuel.

The sprayers carry two 100-lb liquid withdrawal cylinders, one on each side. Modifications have been made on the sprayers to allow them to carry extra cylinders, which last about six to seven hours under continuous operation. They are filled on the premises from a 1000-gal. storage tank. On two of the sprayers, the cylinders are mounted in an upright position while on the latest model, they are horizontal.

Crown Orchards, with 500 acres of apple trees and 300 acres of peach trees, naturally needs a cold storage room. Here, Childs uses a Clark 2000-lb forklift. Originally, this was gasoline powered. Then, last September, one of the employees working in the closed storage room was sent to the hospital suffering from carbon-monoxide inhalation. Childs decided to convert the forklift to propane.

"It was strictly as a human safety factor," he recalls. "We have to keep the door of the cold storage room closed at all times to maintain a temperature of about 30 deg. (F.) so we had to use a fuel that would throw off a minimum of carbon monoxide fumes. Propane is that kind of a fuel."

Once again, unexpected benefits were harvested at Crown Orchards. "After the conversion," says Childs, beaming like a man who has just gotten something for nothing, "we found that the forklift engine no longer gave us trouble starting in the sub-freezing temperatures of the storage room. We no longer had to use the choke and other priming measures needed with gasoline."

The well known benefits of LPG for carburetion became evident to Childs after the fork lift conversion.

"Just take a look at that dip stick," he says proudly as he pulls it from the lift's crankcase. "We've been running this lift for 1500 hours since last September and we still haven't added a drop of oil. And from the clean look of the oil on that stick, we won't have to change that oil for a long time. I'll bet this conversion job will pay for itself in a year or less."

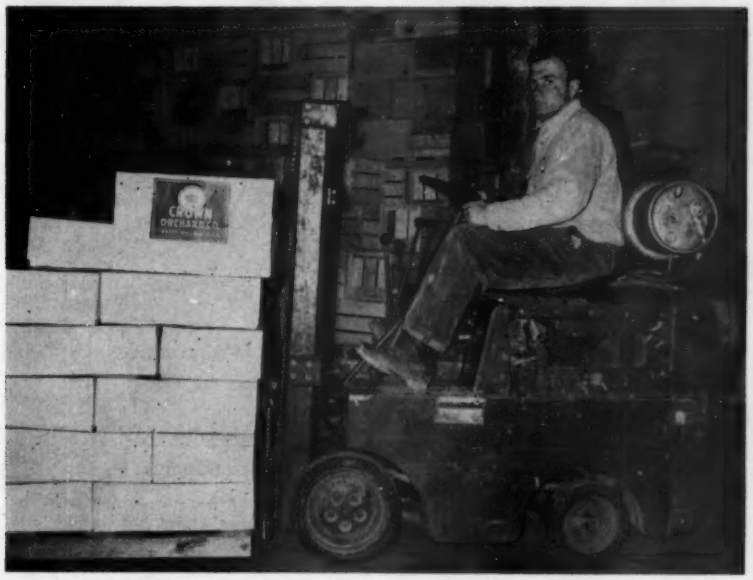
In case of a severe drought, Childs has a propane-powered irrigation system of aluminum piping. It takes water from a multi-million gallon lake and sprays it over the 300-lineal-miles of orchard.

Powering the pumps that send the water through the 6-in. main lines and out the 3-in. feeder lines, are three LeRoi engines, which under full operation, use a total of 100 gal. of propane per day. Crown Orchards has used 4000-5000 gal. of propane in the course of one irrigation season. These engines too, used to be gasoline fired.

Childs has two good reasons for converting them. First, he found the continuous, high speed operation of the pumps was extremely hard on the engine parts and wore them out quickly. When this happened, he needed replacement parts in a hurry to keep the irrigation system going so he would not lose any of his crops. These parts were not always immediately available, so he decided to convert to propane to increase engine life.

When the system is in operation, the pumps are placed at several outlying points within the orchards but well out of sight of the central packing and storage area. This led to the second good reason for converting. Childs found his gasoline supplies mysteriously vanishing from the unwatched pumps. Now, he no longer has a pilferage problem.

Converting to propane, it seems, has answered many more problems than just keeping the engine mechanic away from Crown Orchards. It's little wonder then, that applegrower Childs champions propane almost as often as apples. ■



When a worker in the Crown Orchards cold storage room became sick from carbon monoxide inhalation, this 2000 lb Clark forklift was quickly converted to LPG to do away with such fumes. LPG's other well known benefits came as an extra benefit, elated Childs.

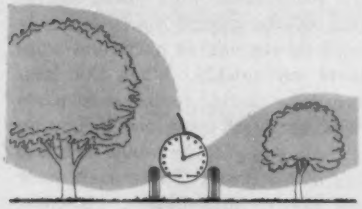
MEMO

To: *LPG Dealers*

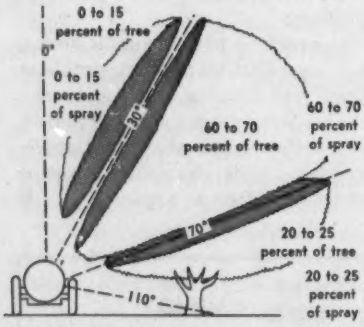
Orchard spraying can be a big summer load. Turn the page to see what progress spraying has made.

Spraying is now a science

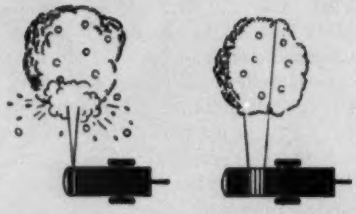
THE first orchard sprayers were nothing more than refined squirt guns, with liquid from a hand-carried cylinder pumped by hand through a nozzle at the end of a long handle. Soon, an air chamber was added to the pump to keep up a steady pressure and the next step was an engine to drive the pump with horses pulling the entire rig. Then the man with long-handled nozzle was displaced by a spraying mast, a pipe that went straight up in the air and sprayed out through nozzles at different heights. The major breakthrough toward truly high speed spraying and better coverage was the discovery that air-carried spray would do the job better. The first air carried sprayer looked much like the new one seen on the preceding pages, but a man had to ride inside to control the direction of the spray. Now, the "inside" man has been displaced.



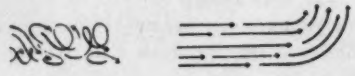
Today's modern sprayer can do just about anything. It can spray two rows of trees or one row, if that is all that is required. It can spray rows that are far apart or close together. It can spray rows of tall trees, average trees, or small trees, or two different kinds of rows at the same time. It manages to accomplish all this by widely variable combinations of nozzles and interior and exterior deflectors. Above, a sprayer covers both a tall, overhanging mature tree row and a young tree row at a much greater distance.



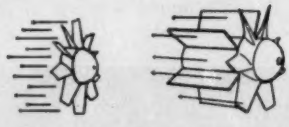
There's much more to the science than simultaneously spraying different types of trees. It is most important that the spray is divided according to the densiy of the tree. Thus, to fit individual orchard conditions, nozzle sizes can be chosen and nozzles can be arranged to put the most spray where there is the most tree. A typical basic spray pattern is shown above.



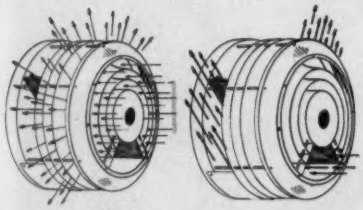
To cover the far side of a tree as well as the near side, the spray must be of sufficient volume and speed to carry through the nearside foliage. However, too high a speed and too intense a spray mean crop damage (above, left). On the other hand, slowing down the speed and reducing the intensity too much would result in inadequate coverage. The answer (right) is the right size discharge area to carry a sufficient mass of spray at the proper speed to reach the far side of the tree and to cause a leaf-turning action, yet still treat tree and fruit gently.



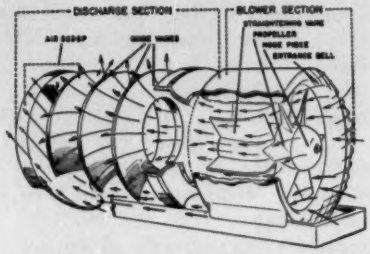
For the best job, the spray must not boil and work against itself (above, left), but must move in a smooth, straight column (right) that carries far and can be directed where needed.



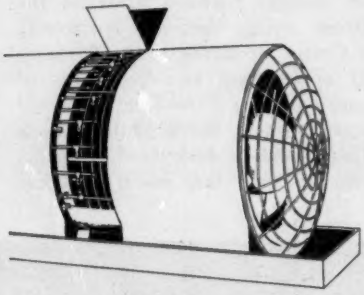
A straight spray is, again, the product of the right combination. The axial flow fan as used in a jet engine packs and accelerates air, yet pushes it in a nearly straight line (left). Adding straightening vanes (right) behind the axial flow fan take out the slight twist, giving a completely controlled stream. This perfect straightness must be maintained even though the air must be turned at a right angle before leaving the sprayer.



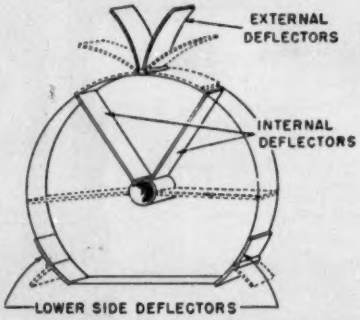
This right-angle turn is accomplished in the discharge section, shown in two views above. The turn itself is accomplished by a series of concentric guide vanes, and the air to be saturated rushes out in a smooth radial pattern (left). Note that air to be saturated does not pass through a portion of the bottom of the unit nor through "the scoop," the opening behind the last guide vane. Instead, the air that passes through these areas (right) gives the spray the added push needed to reach the tops of the tallest trees.



These two air flows are shown together in the drawing above, which also shows both the blower and the discharge sections in proper relationship. Together they form the operating heart of the sprayer.



The spray fluid itself is provided in a series of nozzles along the outer perimeter of the main discharge section.



Final direction is given to the spray by upper and lower external deflectors and internal deflectors within the "scoop" section. These, along with the nozzles, determine the length and direction of the spray. ■

Illustrations courtesy John Bean Div., Food Machinery & Chemical Corp.

CALENDAR

Coming events in the Industry

1959

August 2-4—Kentucky LPGA Annual Convention and Trade Show—Kentucky Hotel, Louisville, Ky.

August 2-4—Alabama LPGA Annual Convention—Tutwiler Hotel, Birmingham, Ala.

August 2-4—New Mexico LPGA Annual Convention & Trade Show—Western Skies Hotel, Albuquerque, N. M.

August 3-5—Oklahoma L. P. Gas Service School—University of Oklahoma, Norman, Okla.

August 9-14—L. P. Gas Service and Carburetion Conference — Sponsored by the Florida LPGA—University of Florida, Gainesville, Fla.

August 16-18—Nevada, Idaho, Utah —Joint Convention and Trade Show—Holiday Hotel, Reno, Nev.

August 16-18—Georgia and South Carolina LPGA's joint meeting—General Oglethorpe Hotel, Savannah, Ga.

August 17-19—Ohio LPGA service school —Ohio State University, Columbus, O.

August 19—New York LPGA Summer Meeting and Clam Bake—Lake Shore Yacht and Country Club, Clay, N. Y.

August 25—Pennsylvania LPGA Convention—Cocoa Inn, Hershey, Pa.

September 11-13—Wisconsin LPGA Fall Convention—Alpine Resort, Egg Harbor, Wis.

September 13-15—North Carolina LPGA Annual Meeting and Convention—Sir Walter Raleigh Hotel, Raleigh, N. C.

September 18-19—Florida LPGA Annual Convention — Golden Gate Hotel, Miami Beach, Fla.

September 23-24—Illinois LPGA Annual Meeting—St. Nicholas Hotel, Springfield, Ill.

September 24—New England Gas Association Safety Conference — Statler Hilton, Boston.

September 25-26—Iowa LPGA Fall Convention—The New Inn, Lake Okoboji, Okoboji, Iowa.

September 28-October 1 — American Welding Society fall meeting—Sheraton-Cadillac Hotel, Detroit, Mich.

October 4-6—Oklahoma LPGA Convention—Biltmore Hotel, Oklahoma City, Okla.

October 5-7—American Gas Association 41st Annual Convention — Conrad Hilton Hotel, Chicago, Ill.

October 8-9—California Natural Gasoline Association 34th Annual Fall Meeting—Huntington-Sheraton Hotel, Pasadena, Calif.

October 12-14 — Northeast Regional LPGA Convention and Trade Show —Sheraton-Park Hotel, Washington, D. C.

October 13—Virginia LP Bottled Gas Association meeting—Sheraton Park Hotel, Washington, D. C.

October 29-30—13th National Home Laundry Conference—Statler Hilton Hotel, New York City.

October 30—West Virginia LPGA Convention — Stonewall Jackson Hotel, Clarksburg, W. Va.

All associations are invited to send in dates of their forthcoming meetings for this calendar.

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WANTED: EXPERIENCED LP GAS service and delivery men to train for plant management in Southeastern Wisconsin. Give age, experience, references, desired starting pay with employment record last 10 years. Reply Box 28, BUTANE-PROPANE News, 198 So. Alvarado St., Los Angeles 57, Calif.

DEALERSHIPS OPEN: EXPERIENCED MAN IN LPG, bottles and bulk. Agency agreement. Good opportunity if has railroad siding and spur. RESTRICTED TERRITORIES. WE FURNISH EVERYTHING. Tank Car material, Butane or Propane. Ross Refineries, Inc., Bellevil'e, Ill.

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LPG BULK PLANTS. WE SPECIALIZE in selling petroleum properties throughout Midwest. Have number desirable plants for sale. OLE BRODD, PETROLEUM MARKETERS, 605 Produce Bank Bldg., Minneapolis, Minnesota.

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WANTED TO BUY: SMALL LPG GAS business; have $10,000 to pay down. Reply Box 42, BUTANE-PROPANE News, 198 So. Alvarado St., Los Angeles 57, Calif.

FOR SALE — TRUCKS - TRAILERS

TRANSPORT. 5600 W.C. GALLONS. 250 lb. twin barrel 1953 Trinity. Like new paint, tires, and tandem. Excellent transportation and/or portable storage! Beverly 8-5235. Bob Ross Inc., 10918 South Western Ave., Chicago 43, Ill.

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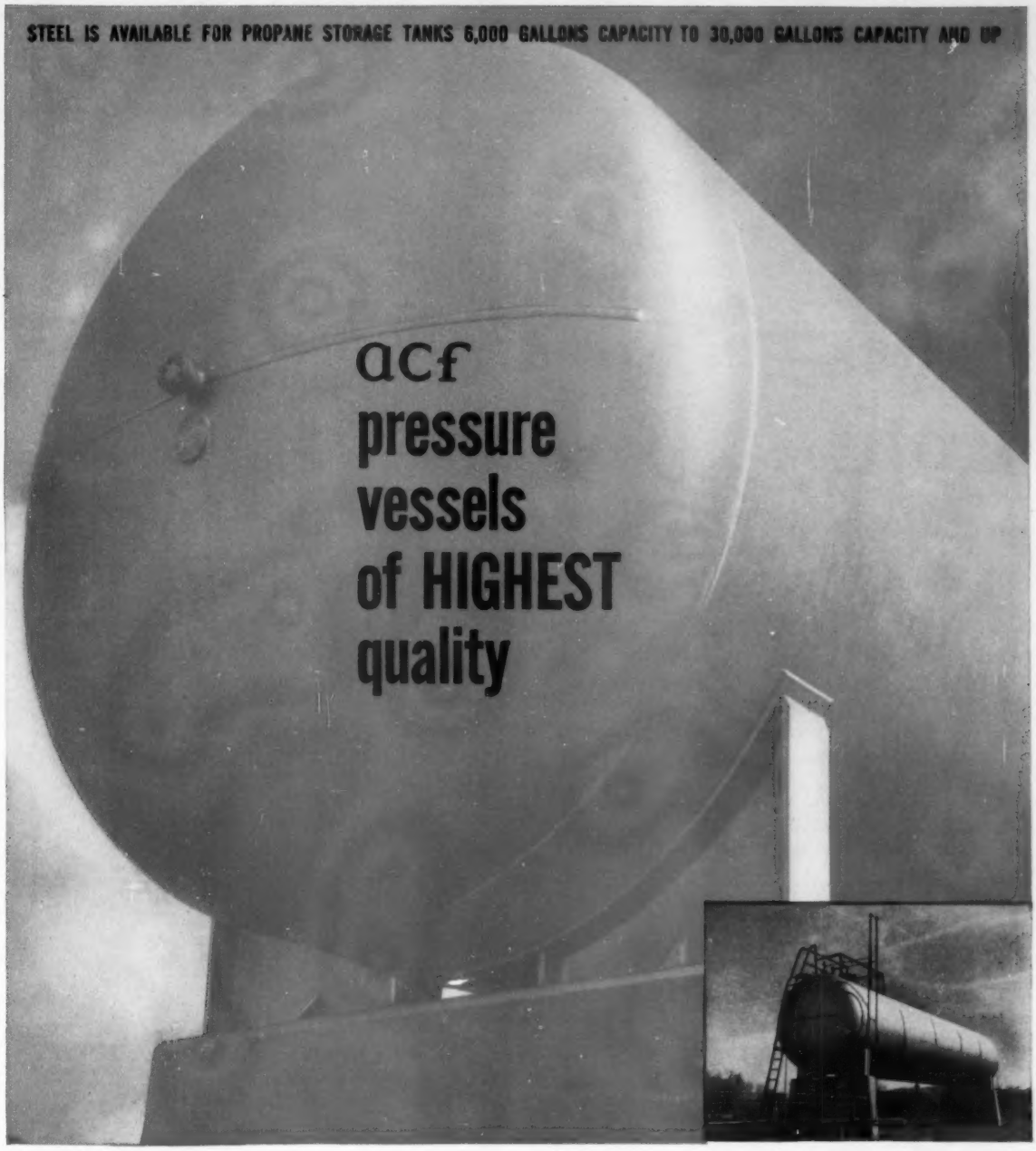

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INDIANAPOLIS, IND.—*3839 Meadows Drive*
KANSAS CITY, MO.—*201 E. Armour Blvd.*
MINNEAPOLIS, MINN.—*215 South 11th St.*
NEW YORK, N.Y.—*80 Broadway*
OMAHA, NEB.—*3212 Dodge St.*
RALEIGH, N. C.—*401 Oberlin Road*
SALT LAKE CITY, UTAH—*68 South Main*
ST. LOUIS, MO.—*4251 Lindell Blvd.*
TAMPA, FLA.—*3737 Neptune St.*
TULSA, OKLA.—*1708 Utica Square*
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